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Pioneer Seed Co.
Dimondale, Mich.

Saier's

GARDEN

M A G A Z I N E



A MANUAL OF RARE FLOWERS, THEIR SELECTION AND CULTURE

Vol. 2, No. 17

DECEMBER, 1951

25 Cents



Notable English Gardens — Garden of Mary Anderson at Broadway. (Page 163)

40 YEARS
of
EXPERIENCE

The George Russell Edition
Originator of Famed Russell Lupin

SPECIAL OFFER IN RARE SHRUBS

AZALEA

—EDDY. Each: \$3.00; 2 for \$5.00

A dwarf evergreen variety that is outstanding, even in vast collections. The flowers are of an intense Indian-red shade and have prettily undulated lobes; this is a scarce variety and few if any are grown in this country. (8-12 inches)

—EXBURY HYBRIDS. Each, \$2.00; 5-\$9.00

These are the finest hardy Azaleas in the world; they are from the world famous gardens at Exbury, England of the late Lionel de Rothschild; they are far superior to any other strain. Their magnificent flower trusses are in glorious shades of cream, yellow, orange, apricot, flame, pink, rose, crimson and scarlet. The plants are of robust habit, reaching a height of 5-7 feet. This is a rare opportunity to import some of these beautiful Azaleas. (9-12 in.)

BROUSSONETIA

—papyrifera. Each \$1.75; 2 for \$3.00

Paper Mulberry. Showy orange red fruits, hardy in the Central States, and with protection, in the North. Seldom offered for sale. Zone VII. (2-2½ feet).

CAESALPINA

—JAPONICA. Each \$1.90; 2 for \$3.00

A magnificent shrub of uncommon appearance; leaves Mimosa-like and the flowers a beautiful bright yellow. Zone VII.

CELTIS

—TONRNEFORTII. Each \$1.00; 3-\$2.50

A small tree growing to 20 feet with polished leaves and reddish yellow berries. (2-2½).

CERATOSTIGMA

—WILLMOTTIANUM. Each \$1.50; 3-\$2.75

A rich blue shrubby Plumbago, growing to 5 feet; flowers from July to November. Zone VII.

CERCIS

—RACEMOSA. Each \$2.00; 2 for \$3.25

This was considered by the late Dr. E. H. Wilson to be one of the very best and most beautiful flowering trees he introduced from China. This very distinct Redbud grows to 20-30 feet high and its rose colored flowers are carried in racemes of as many as 30-40; followed by pods 4" long. (1-1½ feet).

CISTIS

Very desirable rock garden plants; well drained limestone soils in sunny locations. They will not stand much frost.

—Aquilari maculata. Each \$1.00; 5-\$4.00

Huge white flowers with central ring of crimson blotches. Zone VII.

—corbariensis. Each \$1.00; 5 for \$4.00

Pure white, buds crimson; zone VI.

—populifolius lasiocalyx. Each \$1.00; 5-\$4.00

Large leaves and white flowers with waxy petals; zone VII.

—pulverulentus. Each \$1.00; 5 for \$4.00

Vivid rose-pink flowers and gray foliage; zone VII.

—Silver Pink. Each \$1.00; 5 for \$4.00

A lovely hybrid raised in England, with large clear silvery pink flowers; zone VI.

—Cistus Collection. 5 for \$4.00; 10-\$7.75

One each of the above five kinds.

All items offered here are for Spring delivery, FOB Dimondale, Mich., (Express charges collect). Orders must be placed as soon as possible as most items listed here are imported.

In all cases the plants offered are in transplanting sizes and where we are sure this is given in (). Where no mention is made of hardiness, it may be assumed that the plant is hardy at least as far north as Michigan.

The Zone figures as given represent those hardy in the Southern States, as Zone VI, and Zone VII, represents the far South and Southern California.

A Zone map of North America will be published in the December issue.

COTONEASTER WARDII

Named in honor of Capt. Kingdon Ward, one of the greatest of all plant collectors, by whom it was introduced from Tibet. This highly ornamental shrub, which grows 6-8 feet high, is one of the very showiest evergreens, always conspicuous on account of the whiteness of the shoots and undersides of the leaves, which are glossy above and provide an admirable background for the masses of orange-red berries with which it is aglow during winter. Zone VI. (1½-2 feet).

Each \$2.50; 3 for \$3.75

CLADOTHAMNUS

—pyrolaeiflorus. Each \$1.25

A very interesting plant of uncommon appearance; flowers pink and yellow tinted; 1 inch across; grows to 6 feet; a very hardy deciduous shrub.

CLERODENDRON

—trichotomum Fargesii. Each \$1.25; 2-\$2.25

A beautiful shrub, to 10 feet, hardy in the North; flowers white, fragrant, followed by wonderful blue berries with crimson calyxes. (2-2½ feet).

CLETHRA

One each of 4 following \$7.50

—barbinervis. Each \$2.00

Has very long racemes of fragrant flowers; grows to 30 feet.

—Delavayi. Each \$2.00

A magnificent shrub for the South; racemes many flowered; Zone VII.

May we call your attention again to the necessity of ordering early on the special offers made here. They represent RARE and HARD-TO-FIND shrubs and trees, and the available stocks are very limited. Most are also imported items and this will require orders to be in before the first of the year; even then, available stocks may be sold. ORDER THESE RARE PLANTS NOW!

—Fargesii. Each \$2.00

Chinese species with long racemes of white fragrant flowers; grows to 12 feet.

—monostachya. Each \$3.00

A lovely new species of the most beautiful of late flowering shrubs; Zone VII. (9-12 inches).

CORNUS

Dogwood.

—macrophylla. Each \$1.50; 3 for \$3.25

A handsome Chinese species, large leaved and creamy flowers in large panicle-like cymes, 6 inches across, followed by bluish black berries; Zone VI.

COTONEASTER

They are showy shrubs and highly ornamental on account of their pretty leaves and showy berries. Unfortunately some are not hardy in the far North.

—acutifolia villosula. Each \$1.50; 3-\$3.00

Brilliantly colored in the fall; leaves glossy, berries black; pinkish flowers in clusters; to 12 feet. (1½-2 feet).

—amoena. Each \$1.50; 3 for \$3.00

This is a very pretty Chinese evergreen shrub to 5 feet; flowers pinkish, in clusters followed by orange-red fruits. (1-1½ ft)

—bullata. Each \$1.50; 3 for \$3.00

Another pretty Chinese species with pinkish flowers in clusters; berries bright red and cherry-like; leaves large and corrugated. 1½-2 feet).

—floribunda. Each \$1.50; 3-\$3.00

Leaves and berry clusters of this form are larger.

—Cooperi. Each \$1.50; 3 for \$3.00

A rare tall shrub bearing brilliant red fruits in the fall; Zone VI. (1½-2 feet)

—conspicua. Each \$1.75; 3 for \$3.25

A graceful small leaved shrub with spreading, arching branches; it is very conspicuous, when in flower and berry. (1-1½ feet).

—Dielsiana. Each \$1.50; 3 for \$3.00

An elegant 8 foot Chinese shrub with long arching branches, crowded with scarlet berries and brilliantly colored leaves in the fall.

—Harroviana. Each \$1.75; 3 for \$3.50

A graceful Chinese, 6 foot, evergreen shrub; flowers white in dense clusters, 1½ inches across; berries red; Zone VI. (1½-2)

—hebeophylla. Each \$1.50; 3 for \$3.50

Long arching branches carrying rounded leathery leaves and dark red berries; flowers are white and in corymbs. Zone VI. (1-1½ feet)

—Heneryana. Each \$1.00; 3 for \$2.50

A semi-evergreen shrub from China, to 12 feet, with long dark green, glossy green leaves and white flowers in large clusters, followed by dark red berries. An exceptional variety for zone VI. (1-1½ feet).

—lactea. Each \$1.25; 3 for \$3.00

A large, highly ornamental semi-evergreen shrub to 10 feet, from China, with handsome oval leathery leaves, grayish beneath; flowers are white in corymbs, two inches across, followed by large clusters of red berries, carried into winter. Zone VI. (1-1½ feet).

—monpinensis. Each \$1.00; 3 for \$2.75

A large 15 foot shrub similar to C. Bullata but with black fruits; needs protection in the North. (1½-2 feet).

—obscura. Each \$1.00; 3 for \$2.75

The leaves on this 15 foot shrub are yellowish gray beneath; flowers are pinkish and in short clusters, berries dark red. (1½-2 feet).

Continued on Inside of Back Cover

PIONEER SEED COMPANY - DIMONDALE, MICH.

SEED CATALOG

We send you this copy of SAIER'S GARDEN MAGAZINE, in which we are listing all of our seeds; if you should wish the magazine every month, the present subscription price is \$2.00 per year.

PIONEER SEED COMPANY

Dimondale, Michigan

COCHLOSPERMUM - Showiest of Spring Flowering Shrubs or Trees

Of all the showy spring flowering shrubs that we grow in Florida the *Cochlospermum* is the most spectacular; its brilliant 4-inch yellow blossoms, not unlike Dainty Bess roses, come in many flowered clusters that continue to open over a period of several months, usually from January 10th to April 15th here in Florida.

The common name, if there is one, is a literal translation of the scientific name for the genus, Shellseed, from the Greek: *kochlos*, a shell and *sperma*, seed; which in turn arises from the fact the seed, about $\frac{1}{4}$ inch across, resembles a tiny cockle shell. The ineptness of this name when used to refer to a beautiful golden blossom, is perhaps responsible for the persistence of the royal-sounding old generic name, *Maximiliana*. This was abandoned by botanist because of its confusing similarity to a genus of palms (*Maximiliana*), but if a rose by any other name would smell as sweet, *Cochlospermum* by the same token would continue to be the loveliest of garden ornaments. The more appealing Indian common name for a related species, Yellow Silk-Cotton, derives from the fact that, like its distant kin, the Red Silk-Cotton (*Bombax malabaricum*), the *Cochlospermum* has its seeds imbedded in a mass of silky fibers resembling kapok.

Cochlospermum vitifolium

The species most frequently seen in South Florida is the Mexican or Central American *C. vitifolium* (grape-leaved), a tree to 35 feet which begins flowering at 2 feet. The plant is always stiff, rather sparsely branched, and the stout branchlets usually carry the 5-7 lobed leaves only towards their tips. These leaves, 6-8 inches wide, bear a striking resemblance to those of the northern Sycamore Maple (*Acer pseudoplatanus*).

Cochlospermum is leafless ordinarily from January to May, though the first blossoms have appeared before the foliage is gone. Stanley calls it "one of the most showy of Mexican plants... Usually quite leafless when they flower, they are one great mass of showy-yellow blossoms." The densely tomentose, occasionally seed pods, the size and shape of a hen egg, form in May and are beginning to burst open as the new leaves come out in June.

Other Species in Florida

Two additional *Cochlospermum* are just beginning to make themselves known in Florida. Most arresting of these is the double-flowered form of *C. vitifolium*. Apparently this developed in Puerto Rico where it is commoner than the single, but because it sets no seed and can be propagated only by cuttings, its distribution thus far has been very limited, and it is not referred to in the horticultural literature of any other locality. It does occur rarely in Cuba where the colloquial name "Fool sticks" refers to the grotesque appearance of the blooming tree with stiff branches sticking every direction with clusters of posies on the tips. The blossoms of the double-flowered form are larger than the single, often 5 inches or more across, and look very much like a spectacular, butter-yellow double Peony.

The other *Cochlospermum* gaining favor in Florida, is the Indian species, *C. gossypium*, which has flowers almost exactly like

By E. C. Menninger

C. vitifolium, except that there are more of them on the plants. In both species the petals are Buttercup Yellow 5/1, the anthers Orange Buff 5o7, the hundred or more stamens Apricot 6o9. (RHS color chart). The perceptible distinctions between the trees are: Bark: *C. vit.*; red brown; in *C. gossy.*; ash gray.

Leaves: wither brown; wither brilliant orange. Stamens: in *C. gossypium*, trace of Scarlet 19 at its base.

Sepals: *C. vit.*; yellow, like flower, standard and 2 lower sepals measuring $\frac{3}{4} \times 1\frac{1}{4}$ ". 2 side sepals $\frac{3}{8} \times \frac{3}{4}$ ". In *C. gossypium*, reddish $\frac{3}{4} \times \frac{5}{16}$ ", the 2 side sepals $\frac{3}{4} \times$

$\frac{1}{2}$ ".

Peduncle: Yellow in first and Magenta 27 in second.

Seed pod: Hen egg-shape; Goose egg-shaped. Seed: $\frac{1}{4}$ " across in *C. vitifolium* and $\frac{3}{16}$ " across in *C. gossypium*.

No Pests Attack Them in Florida

Several authorities report that the sepals of both species shed when the flower buds open but this characteristic has not been observed on trees in Florida. In India *C. gossypium* is characteristic of dry hilly country, occupying the hottest and stoniest slopes. In Florida both species grow readily in sandy or rocky soil without attention after and to each bushel of these mixed, add $1\frac{1}{2}$ once established. No pests have appeared.

Continued on Page 124

Royal Poinciana - *Delonix regia*



Famed Madagascar re-flowered Trees that should be planted in large yards.

The John Innes Composts

In this country we occasionally hear of this compost and those not familiar with it would suppose that it is a commercial product of a firm of fertilizer manufacturers by this name.

Of course, this is not the fact. The John Innes Horticultural Institute is an English Experimental institute financed thru the gift of this man and two composts have been worked out there, that they claim, meets the needs of most plants.

It is made up of compost and fertilizers and stress is laid on the condition of the compost, that it be in the right physical condition, free of harmful organisms and provide an adequate balanced food supply. It should be partially sterilized by heating at 180 degrees F for not more than 30 minutes, each part to be sterilized separately and mixed afterwards.

Of course any formula of this sort has a set amount for the fertilizers, loam, sand, humas, etc., but stress is placed on handling all the material in a clean way.

One of the mixtures is intended for seed sowing and is made of:

- 2 parts good loam,
- 1 part peat moss,
- 1 part coarse sand,

and to each bushel of the three mixed, add $1\frac{1}{2}$ ounces of superphosphate of lime (16% acid phosphate) and 1 ounce ground limestone or chalk.

For potting or the No. 2 Compost, this differs from the No. 1 Compost (above) in that it is made up as follows:

- 7 parts medium loam,
- 3 parts good peat moss,
- 2 parts coarse sand,

ounces of hoof and horn meal; $\frac{1}{8}$ ounce grist (13% nitrogen) $1\frac{1}{2}$ ounces superphosphate of lime (16% acid phosphate), $\frac{3}{4}$ ounce sulphate of potash (48% pure potash) and 1 ounce ground lime stone. Cut the amount of sand if a light loam is used.

Sift the commercial fertilizers thru a $1\frac{1}{16}$ inch sieve before adding to the mixture

Continued on Page 128

Growing Day Lilies

For those who want detailed instructions on growing Day Lilies (*Hemerocallis*) from seed and "do it right", one caution, do not drown the seed; that is do not let the seed come in contact before germination with soggy wet soil. Like corn seed, they are prone to rot in a soggy soil.

An easy way to do the work is to plant in a good sized (6" or better) "squatty" (Azalea) clay pot. Pebbles over the drainage hole and medium good potting soil in the bottom, with a top layer of 1½" of only moist builders sand (or vermiculite, peat humas) to plant the seed in. Cover seed 3 or 4 times their size. Use a pane of glass (raised at one end for air circulation) over the pot. Water only when about to go dry and then from the bottom by placing the pot in a pan of water until surface is moist again. Allow 21 days for germination; it may be less in warm weather. Keep the pot indoors when temperatures run consistently below 55 or 60 degrees F.

After germination, plants will await your convenience in transplanting, but to push them when plants form their 3rd or 4th leaf, transplant to either a well prepared seed bed or to the usual flat or wooden box. Soil suggested: a third garden loam, a third peat humas or leaf mold and a third well rotted manure or more leaf mold. Add builder's sand if the mixture seems at all gummy. Set plants 4" or more apart (less if you lack space). Let them grow the first 6 months or a year (depending on how fast they are growing for you). At the end of this time you should have nice young plants to set out. It usually takes 2 years from seed to flowering but some have bloomed within 15 months for me. April planted seed gave some June bloom; August planted seed bloomed following summer.

Young seedlings, particularly in flats, do appreciate good drainage, not a completely dry box, but a soil that does not stay soggy or gummy. They'll take it on the dry side better than too wet. After the plants get going, if you want to use a little fertilizer in the water once a month or so, it will speed growth. I recommend that the seed bed or location of flat not be in full sun; semi-shade or high shade from tall trees is better for the seedlings.

When cold weather arrives some of the seedlings will disappear. Do not think they have died, about 30% of the seed usually produces lilies which are dormant in winter; the others (in the South) will be ever-green.

By Patricia C. Ffoulkes, Fla.

GERMINATING PENSTEMONS

In the case of the alpine species, especially, many gardeners report good success by putting the seed in the freezing compartment of the refrigerator. The seed really should be moist and, of course, not allowed to dry out again after becoming moist. After freezing for 2-4 weeks plant the seed in soil.

This should be done so as to plant the seed during late March or April.

For a general rule for Penstemons planting, well drained soil is the prime requirement. Most need full sunshine and others do best in a scree soil, that is, a soil containing coarse material, gravel, etc, which is the same as good drainage. Our own plantings always are best on raised beds.

Another suggestion about Penstemon germination, is that they usually show growth in the seed pans the first part of May.

GET EVERY ISSUE — \$2.00 PER YEAR

FREESIA - GAILLARDIA - GALEGA

This seed list continues from page to page and from issue to issue and runs alphabetically.

FATSIA. (FAT-see-ah) Araliaceae.

A single evergreen shrub from Japan and grown in the greenhouse in the North or out doors in the South. It is especially desirable for its foliage.
—*japonica* v. *Moseri*. A compact growing form. **FAT-1. 25¢**

FERNS.

Ferns are classified in several genera; we list here under this heading, collected ferns spores, mostly from Columbia, of which we do not have sufficient descriptions to properly classify them.

—*Tree Ferns*. Collected in Columbia. **FERN-3. 25¢**
—*Tongue Fern*. Small creeping fern from Columbia. **FERN-2. 25¢**
—*Tongue Fern*. Non-creeping form from Columbia. **FERN-4. 25¢**
—*Mixed Fern Spores*. **FERN-X. 25¢**

FESTUCA. (fes-TUC-ah) Fescus. Gramineae.

Perennial grasses, mostly tufted, with spiklets in narrow panicles. Some are suitable for pastures, others for lawns or ornamental grasses; listed here are the ornamental.
—*ovina* v. *glauca*. Blue glaucous foliage; 2 ft; HP. **FEST-8G(C). 25¢**

FRANKLINIA: See *Gordonia alata* maha.

FRASERA. (fray-ZER-ah) COLUMBO. Gentianaceae.

North American plants with white, yellowish or bluish flowers in panicked clusters.
—*Parryi*. Greenish white fls; S. Calif.; 3 ft. **FRAS-4. 20¢**

FREESIA. (FREE-zee-ah) Iridaceae.

A very popular flower for the greenhouse. Flowers in 10 weeks after planting bulbs and they make choice flowers in the late winter or early spring. They are grown outdoors in S. California where they should be planted in the fall. Seed will produce flowers in second or third year. Order the bulbs early in the year.

—*Tubergeni Hybrids*. Beautiful range of bright colors. **FREE-6H. 50¢**
—*Luzi*. New type in beautiful new shades and lge fls. **FREE-2. 50¢**

FREESIA CORMS: Offerings will follow in later issues.

FRITILLARIA. (frit-il-LAY-ree-ah) Liliaceae.

Bulbous plants with drooping bell-shaped flowers often checkered in greenish, purple or brown. They can be grown from the bulbs which are offered in the summer bulb lists or they can be grown from seed. They are easily grown in ordinary soil and flower early in the spring.

—*acnipeala*. Fls large, olive-green and purple; rare; 18"; HP. **FRIT-2. 30¢**
—*cirrhusa*. Yellowish fls checkered purple; 2 ft; HP. **FRIT-8. 25¢**
—*imperialis*. Purplish brick-red or yellow-red fls; to 4 ft; HP. **FRIT-11. 25¢**
—*rubra*. Extra red form; 3 ft; HP. **FRIT-11R. 25¢**
—*meleagris*. Fls checkered and veined with purplish or maroon; HP. **FRIT-16. 25¢**
—*pallidiflora*. Pale yellow fls spotted inside; 9"; HP. **FRIT-20. 25¢**
—*pudica*. Yellow Bell. Earliest spring fl; 6"; HP. **FRIT-22. 25¢**
—*pyrenaica*. Dark purple spotted with green; 18"; HP. **FRIT-25. 25¢**
—*recurva*. Scarlet checkered with yellow; 2 ft; HP. **FRIT-26. 25¢**
—*Roylei*. Greenish yellow fls netted dull purple; 2 ft; HP. **FRIT-28. 25¢**
—*verticillata*. White or yellow fls dotted at base; 18"; HP. **FRIT-33. 25¢**
—*Fritillaria Blend*. Mixture of above. **FRIT-X. 25¢**

FUCHSIA. (FEW-shuh) Onagraceae.

They are tender plants grown in the cool greenhouse in the North. They can be bedded out during the summer and in mild climates grown outdoors. They are excellent house plants, very pretty and popular.

—*California Strain*. Crosses from A. F. Society, A and B rated varieties. **FUCH-1. 50¢**

GAILLARDIA (gay-LAHR-de-ah) BLANKET FLOWER. Compositae.

Annuals, biennials and perennials with showy solitary heads and yellow or red rays. They make very good cutflowers as well as display in the border. Easily grown, doing best in a light open well drained soil. The annuals can be either started indoors or sown in the open ground in April. Most of the common garden varieties belong to the species *aristata*.

G. ARISTRATA: Hardy perennial, easily grown anywhere; comes in many var.
—*Bremen*. Coppery scarlet with yellow tips; pretty. **GAIL-1B. 15¢**
—*GianHi hybrids*. Large flowered strain in many colors. **GAIL-1H. 15¢**
—*Goblin*. A dwarf compact variety; deep red with golden border. **GAIL-1G. 15¢**
—*Kobold*. A Swiss novelty with red fls and gold zoning. **GAIL-1K. 15¢**
—*Monarch Strain*. Very large flowers in a wide color range. **GAIL-1M. 15¢**
—*Lorenziana*. Ray and disk flowers. **GAIL-1L. 15¢**
—*Portola Hybrids*. Scarlet intensified with bronze-gold tips; semi-double. **GAIL-1P. 15¢**
—*Yellow Queen*. Pure golden yellow, very pretty. **GAIL-1Y. 15¢**
—*Tangerine*. Beautiful orange color, true. **GAIL-1T. 15¢**
—*The Dazzler*. Intense golden yellow with maroon-red zone. **GAIL-1D. 15¢**
—*Blend of the Above Varieties*. **GAIL-1X. 15¢**

G. PULCHELLA: Also listed as *G. picta* and *G. Drummondii*. Hardy annuals growing to 1½ feet. They come in several varieties and are grown mainly for cutflowers.

—*Indian Chief*. Pretty deep coppery scarlet with dark brown center. **GAIL-7C. 15¢**
—*Double Yellow*. Pure golden yellow. **GAIL-7Y. 15¢**
—*Single Mixed*. A choice blend of varieties. **GAIL-7X. 10¢**
—*New Giant Double Hybrids*. A high class mixture. **GAIL-7DX. 15¢**

GALEGA (gah-LEE-gah) Leguminosae.

Bushy perennials with white, blue or purple pea-like flowers in thick clusters or racemes; excellent cutflowers. Seed can be sown where plants are to grow.

—*officinalis*. Goat's Rue. White, lilac and rose fls; 3 ft; HP. **GALG-2. 15¢**
—*persica*. Pure white for back of the border; 3 ft; HP. **GALG-5. 15¢**

GAMOLEPSIS (gam-MOL-ep-is) Compositae.

Small shrubs or plants from S. Africa having yellow solitary flower heads of ray and disk flowers. Grown for the flowers or edging; tender.

—*tagetes*. Bright yellow; 1 inch across; early fl'ing; dwarf; 12"; TA. **GAMO-1. 20¢**

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

BALANCE LILY BULB OFFERING

Continued from Back Cover

PRICES: Are for 1, 10, and 25 bulbs prep'd.

Planting depths given are always from the TOP of the bulb to surface of the soil.

L. SCOTTIAE. (Light Form) Oct.
4-6" .65 6.00 12.00

Similar to the dark form above but the color is salmon-orange and the flowers two weeks later.

L. SKYROCKET. (Hybrid) Oct.
Fl. Size 1.50 12.00 24.00

A new hybrid with pendulous medium sized recurved flowers in vermilion-red dotted garnet-brown. It is stunning; 6 ft; July; cover bulbs 5".

L. SPECIOSUM ALBUM. (Kraetzneri) Nov.
6-8" 1.50 12.50 25.00
8-10" 1.90 15.00 30.00

A choice form of the pure white Speciosum having a green stripe in the middle of each petal. A beautiful Lily 4-5 ft. high; August; cover 5"; 1 ft. apart.

L. SPECIOSUM ALBUM (New Form) Nov.
Fl. Size 2.25 18.25 37.00

A 1950 introduction, large recurved flowers, white with greenish mid-rib and golden anthers; 5 ft; August.

L. SPECIOSUM MAGNIFICUM. Nov.
6-8" .70 7.00 14.00
8-10" .95 8.75 18.00
10-12" 1.25 10.50 22.00

Pink Show Lily. A deep carmine-pink, spotted crimson and is larger flowered and more robust than S. rubrum. It is one of the very best Lilies for the border, as all the Speciosum Lilies are not particular as to their cultural needs; 5 ft; August.

L. SULPHUR HYBRIDS. Nov.
Fl. Size 2.20 18.00 36.00

A new strain of large trumpet Lilies varying in color from ivory to sulphur-yellow with the exterior tinged root-beer grown; 6 ft; August; cover 6".

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

L. SUPERBUM. Oct.
1st. Size .40 4.50 9.00

A native species high in the list of good Lilies. The flowers are recurved, large, bright orange-red, suffused yellow with red tips and brown dots, in a true Turk's Cap form. It prefers a moist well drained soil with plenty of humus and in partial shade; 6 ft; July-August; cover 6"; 1 ft.

L. SUTTON COURT. (Hybrid) Oct.
Fl. Size 3.00

A beautiful recurved with small canary yellow flowers shaded pink, and spotted with red-purple dots, exterior shaded pink. It is much like Mrs. Backhouse but in a deeper tone. 5 ft; late June; cover 5".

L. TENNUIFOLIUM. (Pumilum) Sept.
Last column prices are for 100 bulbs.
2-2½ 1.50 3.00 8.75
2½-3 1.70 3.25 9.50
3-3½.....25 2.00 4.00 10.50
3½-4" .30 2.25 4.50 12.00
4-5" .35 3.00 7.50 14.00

The gayest of the little Lilies and among the first to bloom. Its bright scarlet Turk's Cap flowers, on wiry stems, is a refreshing sight in the front of the border or in rockery. They are easily grown and at the prices quoted, they can be planted in masses of 25 or more, setting them 9-12 inches apart; 2 ft. tall; June; cover 3"; full sun.

L. T. A. HAVEMEYER. (Hybrid) Nov.
Fl. Size 4.00

This beautiful hybrid has blooms up to 7 inches in diameter, a soft buff suffused apricot with showy green throats. Its late blooming period, late August, makes it attractive for the late flowers; 5-6 ft; cover 6" with soil.

Planting depths given are always from the TOP of the bulb to surface of the soil.

L. T. A. HAVEMEYER SEED'GS. Nov.
Fl. Size 2.00 15.00 31.00

The best group of semi-recurved hybrid Lilies we have thus far encountered. They

are mainly hybrids of L. T. A. Havemeyer, L. Pauline Kline and L. Edmund L. Kagy. These plants produce a myriad of large corsage type flowers in color varying from creamy white through lemon-yellow to a cadmium-orange with deep green throats and a few garnet-brown dots. Some special selections from this group will be introduced as named clones in the near future; 5-6 ft; August; cover 6".

L. TSINGTAUENSE. Oct.
Fl. Size 1.20 10.00 20.00

A small semi-erect Lily, persimmon orange with a few garnet-brown dots, and having attractive marbled foliage; 2-3 ft; July; cover bulbs 3".

L. UMBELLATUM ERECTUM. (Hyb) Oct.
5-6" .30 4.50 9.00
6-7 .35 5.00 10.00
7-8" .45 5.50 11.00

The Umbellatum Lilies come in many varieties, all early blooming and the first to make a showing; the flowers are erect, bowl-shape and of the easiest culture. Usually from 2-4 feet tall and they can be planted in the front of the border. This variety has large orange-red flowers and is very pretty; 3 ft; June; cover 3"; 1 ft. apart.

L. UMBELLATUM INCOMPARABLE
Hybrid Oct.
5-6" .35 4.00 8.00
6-7" .40 4.50 9.00
7-8" .50 5.50 11.00
8-9" .60 6.50 13.00

A rich crimson and the best of the medium reds. It is an attractive variety, vigorous, and showy in groups. The flowers are bowl-shaped and face upwards; 3 ft; June; cover 4 inches; 1 ft. apart.

L. VALIANT. (Hybrid) Oct.
Fl. Size 3.50

A 1950 introduction, semi-upright, large deep cardinal-red flowers, dotted black; 5 feet; July; cover 5 inches.

L. VIKING. (Hybrid) Oct.
Fl. Size 1.50 12.00 25.00

Hybrid between Davidi, Willmottiae and Tigrinum, a nodding Turk's Cap in bright salmon-orange with mahogany dots; bears stem bulbels. As many as 35 flowers per stalk; 6 ft; July to August; cover 5 inches.

L. WAXWING. Oct.
Fl. Size 3.00

An early June flowering Lily derived from a cross of L. Philadelphicum and L. Amabile, and originated by Mrs. J. C. Taylor. The flowers are carried on 3-4 ft. stems, face outwards and number from 10-15 on established plants. Color is bright orange-yellow shaded fire red, freely dotted oblood. An excellent addition to our early flowering Lilies.

L. WILLMOTTIAE. Oct.
4-5" .25 3.50 7.00
5-6" .30 4.50 8.00
6-7".... .35 5.25 11.00
7-8" .45 6.00 12.00

A fine Chinese Lily now listed as L. Davidi Willmottiae, of the Martagon type. It is reliable, flowers are bright orange-red with some black spots, and as many as 20 flowers on a stalk. 3-6 ft. tall; July; cover 5 inches; 1 ft. apart.

ABOUT PRICES.

Your will note that the prices quoted are lower than usually charged. This is possible because of the new catalog form. The quality is the same -- the very best.

BEGINNERS \$7.00 SPECIAL OFFER

For those just starting to grow Lilies we will ship 25 bulbs of five or more kinds, all flowering sizes and sure to bloom next year.

Each bulb will be labeled and all easy to grow. The varieties will be taken from the list of Lilies offered in these columns and all valuable kinds. The listed value will be much more than this special offer and will not only be a saving in price but a sure selection for the beginner's planting.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 20¢ per line of seven words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

PLANTS FOR SALE

AFRICAN VIOLET LEAVES. 12 for \$1.00 named varieties, plants 3 to 6 in. tall 3 for \$1.00, my choice. Gypsy Series leaves 20¢ each 7 for \$1.00; plants 2 for \$1.00. Rose-onna leaves 3 for \$1.00; Please add 25¢ postage. Mrs. Sophia M. Baker, 2733 S. E. 35th Place, Portland, 2, Ore.

CUTTINGS: \$1.50 per dozen; house plants mixed or Begonias or Sweet Scented Geraniums, Mints, herbs, wild ferns; prepaid. Mrs. H. C. Sanborn, RFD 1, Thetford Center, Vt.

HELP WANTED

HELP WANTED. We have a good position open for a young woman who has had training in botany; should be able to type. Pioneer Seed Company, Dimondale, Mich.

SITUATION WANTED

SEEDS FOR SALE

HERB SEEDS AND PLANTS: We specialize in raising herb seeds and grow all popular and many rarer kinds. Also field-grown perennial herb plants. Our descriptive folder lists many varieties at reasonable prices. **PLANTATION GARDENS,** RFD 2 Box 193, Lynchburg, Virginia.

DODECATHEON CUSICKII. Fresh seed nowready, 50¢ per packet. Pioneer Seed Co., Dimondale, Mich.

DAYLILY SEEDS hand pollinated from choice hybrid reds, rose, pastels. Fresh seed (mixed only) 10 for 30¢; 40 for \$1.00. Ffoulkes, 610 Bryan, Jacksonville, 2, Fla.

RARE PLANTS. If you grow rare plants you will find these columns your best outlet. Try a small ad and see.

TREE AND SHRUB SEEDS: We carry in season over 800 tree and shrub seeds; if you need these seeds be sure you get our list. Pioneer Seed Co., Dimondale, Mich.

MAKE USE OF THE CLASSIFIED SECTION - IT'S YOURS

AURATUM LILIES

By Mrs. Ann Hanley, B. C.

Which is your favorite lily? There are so many of them a choice may be difficult. The Candidum has always been mine but when in August I go over to the Esperanza Gardens and see the fields of Auratum or the dozen of varieties shown at an Alwyne Buckley lantern lecture, I know that nothing less than a gold banded Auratum will satisfy me.

Seventeen years ago Mr. Buckley came to the province of British Columbia and taking up raw land proceeded to raise lilies. At that time it was not known whether the Easter Lily would grow as far north. Esperanza began with Crofts but soon gave them up for the Auratums. The seed was procured from Henry Warda of Japan in order to start with bulbs free from Lily diseases.

At first a greenhouse was considered necessary. Recently this has been discarded and the Lilies grown on outdoor seed beds. The kind of land suitable, according to Mr. Buckley, is not so important as its condition. They will grow on celery land, light sand, alder bottoms or even clay. A summer of cultivation will put the soil in the right condition for the fall planting of the Auratum bulbs. The land is manured, plowed, then sown to peas in the spring or vetch and rye in the fall. When green and lush he applies superphosphate of lime and plows under. During the summer the fallow is cultivated to get rid of the weeds. By September it should be ready for the Lilies. This is the method used in his soil rescued from an area of burned over firs, which has grown up in deciduous trees. There is usually plenty of rain and little snow, but there are occasionally dry years.

Dormant Condition

Auratums are at their full glory in August. The bulbs should be ready in September or October. In colder parts of the country they should be planted late in the fall so that they may go into winter in a dormant condition. The tendency of all Easter lilies to keep a green shoot in winter whenever the soil is moist will pull these lilies right out of the ground. A blanket of snow is desirable in the country. Wet soil is not good for them, so that raised beds may even be necessary in parts. These must be mulched with peat to hold the necessary moisture.

In planting the individual bulbs, they are planted deep or shallow according to whether they are to raise bulblets or blossoms. Large bulbs intended for sale are planted three inches down. For bulblets, planting six or seven inches down is right in order to provide the warmest place for the bulblets to form. Sand underneath the bulb keeps it from rot.

Hundreds of hybrids have been grown at Esperanza Gardens. Inferior ones are destroyed. About a hundred were registered when the top production of varieties was being produced. There were beautiful white ones, some of great size, some touched with green, red or purple. Of late with their market having grown perceptibly the Buckleys, father and three sons, are now going in for mass production rather than raising unusual hybrids. No other lilies, except *L. speciosum* are grown on their grounds. This lily is closely related to auratum and will cross pollinate freely with it. So it is useful as a pollen bearing parent for introducing new stock to auratums. Even with the regular stock *Esperanza* lilies will often produce unusual specimens.

GAURA - GENTIAN - GEUM

GAULTHERIA. (gaw-THEE-re-ah) Ericaceae.

Evergreen woody plants of the Heath Family having rather small white, blue, red or black flowers followed by fruits. Many are very dwarf and suited for the rock garden. Sandy soil, plenty of moisture, best in light shade and acid soil; not real hardy in the North without winter protection.

- Hookeri*. Rare species from the Himalayas..... GAUL-6. 50¢
- Miqueliana*. White or pinkish nodding flowers; 12"; RG..... GAUL-10. 30¢
- trichophylla*. Solitary pink flowers; prostrate; RG..... GAUL-21. 30¢
- Gaultheria Blend*. Mixture of available species..... GAUL-X. 25¢

GAURA. (GAU-rah) Oragraceae.

North American perennials; rose or white flowers in spikes or clusters. Grown in the border or wild garden.

- Lindheimeri*. White with rosy cups; grow as hardy annual; 4 ft; TP.... GAUR-2.....15¢

GAZANIA. (gah-ZAY-ne-ah) (Meridiana) Compositae.

Grown in the flower garden and for edging. Flowers in white, yellow, orange and opening in the sunshine, disks dark.

- longiscarpa*. Heads 2" ac; rays orange with dark spot at base; TA*..... GAZ-1. 30¢
- splendens*. Mixed. Rays orange with black and white spot at base; 18"..... GAZ-8. 20¢

GENISTA. (jen-NIST-ah) BROOM. Leguminosae.

Ornamental shrubs with yellow or white flowers in racemes followed by flattened pods. Thrive in dry locations and mild climates, not hardy in the North. *G. canariensis* is grown in the greenhouse for pretty pot plants.

- aetnensis*. Golden yellow, frag; July-Aug; Sicily; 15 ft; HHS..... GENS-1(S). 25¢
- canariensis*: see *Cytisus canariensis*.
- fragrans*: see *Cytisus fragran*.
- germanica*. Yellow in racemes; June-July; 2 ft; HHS..... GENS-10(S). 25¢
- hispanica*. Golden yellow, terminal heads; May-June; 2 ft; HHS..... GENS-11(C). 30¢
- horrida*. Yellow in terminal heads; 1½ ft; HHS..... GENS-12(C). 40¢
- monosperma*. White, frag, short racemes; Mar-Apr; 10 ft; HHS..... GENS-17(S). 25¢
- pilosa*. Yellow, short racemes; prostrate; May-June; HHS..... GENS-21(S). 25¢
- radiala*. Yellow heads; May-July; not spiny; 2 ft; HHS..... GENS-22(S). 25¢
- tinctoria*. Yellow s; July-Aug; 3 ft; HHS..... GENS-28(S). 25¢
- Genista Blend*. All species mixed..... GENS-X. 25¢

It is our intention to have these lists perfectly accurate and we welcome corrections

GENTIANA. (jen-SHEE-ay-nuh) GENTIAN. Gentianaceae.

Low growing annuals and perennials, generally with blue or purple flowers, occasionally white or yellow. They are excellent rock garden plants; require good drainage but the soil must be moist. They should be in as cool a place in the garden as possible. Best results will be had in planting fresh seed; they are slow to germinate and provision should be made so that the seed pan can be held a year or two.

- acaulis*. Dark blue, spotted inside; 4"; HP..... GENT-1(C). 30¢
- purpurea*. Purple fls; 2 ft; HP..... GENT-96(C). 30¢
- verna*. Tufted; dark blue fls; 3 in; HP..... GENT-118(C). 50¢

GERANIUM (ge-RAN-ne-um) CRANESBILL. Geraniaceae.

Annuals and perennials grown in the border or rock garden. Set the plants of the perennials species, out in the spring. They are easily grown. The greenhouse Geraniums are listed as *Pelargonium*.

- collinum*. Purplish violet fls; 1½ ft; HP..... GERN-11. 25¢
- ibericum*. Blue; 1½ ft; HP..... GERN-23(C). 30¢
- nepalense*. Rose-purple fls; decumbent to 18"; HP..... GERN-30. 20¢
- psilostemon*. (*G. armenum*) Dark red, spotted black at base; 24"; HP..... GERN-39. 25¢
- sanguineum*. Reddish purple fls; 18"; HP..... GERN-46. 15¢
- pratense*. Blue, ½ in. ac; Eurasia; 3 ft; HP..... GERN-98(C). 30¢
- prostratum v. lancastriense*. Dwarf; dark pink fls; 6"; HP..... GERN-46L. 25¢
- Geranium Blend*. All the available species mixed..... GERN-X. 25¢

GERARDIA (ger-AR-de-ah) (Agalinis) Scrophulariaceae.

Annual and perennial plants with rather showy red or yellow trumpets. Sow seed by a rotted log in light shade. Not easy to establish.

- virginica*. (*Aureolaria*) Nice yellow; June-Aug; 4 ft; HP..... GERA-3. 25¢

GEUM (GEE-um) Avens. Rosaceae.

Erect perennial plants, easily grown and excellent for cutting or for beds, border or rock garden. Sow the seeds in open ground early in the spring.

- Borisii*. Hybrid with bright yellow flowers; 6"; HP..... GEUM-3. 25¢
- chiloense v. Firegall*. Bright scarlet flowers; 24"; HP..... GEUM-10F. 15¢
- Gold Ball*. Rich golden yellow flowers; 24"; HP..... GEUM-10G. 15¢
- Mrs. Bradshaw*. Rich double scarlet flowers; 24"; HP..... GEUM-10B. 15¢
- Lady Stratheden*. Double golden yellow flowers; 24"; HP..... GEUM-10S. 15¢
- coccineum*. Bright red flowers 1" across; HP..... GEUM-11. 15¢
- Fireball*. Brilliant red variety..... GEUM-11F(C). 30¢
- elatum*. Golden yellow; 12"; best in light shade; HP..... GEUM-13. 20¢
- montanum*. Golden yellow flowers 1½" across; 1 ft; HP..... GEUM-24. 15¢
- urbanum*. Yellow flowers, ½" across; 2 ft; HP..... GEUM-40. 20¢
- Yu (10,834)*. Newly collected from China..... GEUM-42. 80¢
- Geum Mixture*. All available kinds mixed..... GEUM-X. 15¢

GILIA. (JIL-e-ah) Polemoniaceae.

Annual, biennial and perennial plants with blue, yellow, pink or white funnelform flowers. They are mostly annuals and the seed can be planted early in open ground.

- achilleaefolia*. Blue fls in dense terminal clusters; 2 ft; HA..... GIL-2. 15¢
- aggregata*. Scarlet fls; 2½ ft; HB or HP..... GIL-4. 30¢
- capitata*. Light blue fls in heads 1" across; 2 ft; HA..... GIL-12. 15¢
- White*. A white variety of the above..... GIL-12W. 15¢
- caruifolia*. HA..... GIL-13. 15¢
- dianthoides*. Ground Pink. Exquisite pink fls 1"; 6 in. tall; HHA..... GIL-18. 20¢
- lutea*. (*G. micrantha*) Erect; yellow, white or rose fls; 6"; HHA..... GIL-26. 15¢
- rubra*. Standing Cypress. Scarlet fls with markings; 6 ft; TB or TP..... GIL-32. 15¢
- tricolor*. Fls with lilac lobes, yellowish tube and purple th; 18 in; HA..... GIL-48. 15¢
- Gilia Mixture*. All available kinds mixed..... GIL-X. 15¢

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

GLAUCIUM - GODETIA - GOURDS

GLADIOLUS (glad-ee-OH-lus) Iridaceae.

Cormous plants native of S. Africa. Most of them must be dug up in the fall and stored in a frost proof place over winter. There are some species that are hardy in Michigan. The common garden Gladiolus are grown from corms as a rule.

- blandus. White and red tinged fls; 2 ft..... GLAD-5. 25¢
- illyricus. Reddish fls; 18"..... GLAD-29. 25¢
- primulinus. Various colors; 18"..... GLAD-42. 15¢
- psittacinus. Bright red fls; 3 ft..... GLAD-44. 25¢
- Gladiolus Mixture. All available kinds mixed..... GLAD-X. 15¢

GLOBULARIA (glob-u-LAY-re-ah) Globulariaceae.

Little shrubby plants from the mountains of S. Europe and Asia with blue or white flowers in rounded heads. They are easily grown from seed, in a moist and partly shaded place and also suitable for the rock garden.

- nervigica. Species from Austria..... GLOB-6. 25¢
- trichosantha. Globe Daisy. Fluffy blue flower heads; 8"; HP..... GLOB-9. 20¢

GLOXINIA: see *Sinningia speciosa*.

GLAUCIUM (GLAW-se-um) HORNED or SEA POPPY. Papaverceae.

Glaucous plants with orange colored juice and with large solitary orange or yellow flowers. They are grown as annuals, thriving in any soil in a sunny location.

- Mixed. Scarlet and yellow; 2 ft; HP grow as an annual..... GLAU-X. 15¢

GODETIA, (go-DEE-she-ah) Onagraceae.

Erect annuals with bright showy flowers in red, lilac, purple or white. They are easily grown, best in a light soil and sunny exposure. Seeds can be started indoors or planted where the plants are to grow.

G. GRANDIFLORA: This species is the commonly grown Godetia. It comes in many choice varieties both double and single flowers. They all are hardy annuals.

- Charming. Dwarf; very bright deep satiny pink; 12 inch tall..... GOD-4C. 15¢
- Crimson Glow. Dwarf; extra dark crimson strain; 12"..... GOD-4G. 15¢
- Duke of York. Dwarf carmine-scarlet; 12"..... GOD-4D. 15¢
- Kelvedon Glory. Dwarf; deep glowing salmon-orange; 12"..... GOD-4K. 15¢
- Mauve Queen. Beautiful new mauve color: dwarf; 12"..... GOD-4M. 15¢
- Purity. Glistening solid snow-white; 12"..... GOD-4P. 15¢
- Rosemunde. Beautiful rose-pink; 12"..... GOD-4R. 15¢
- Sybil Sherwood. Pretty salmon-pink; 12"..... GOD-4S. 15¢
- Thunderbolt. Vivid deep crimson with frilled petals; 12"..... GOD-4T. 15¢
- White Swan. Large flowering satiny white; 12"..... GOD-4W. 15¢
- Dwarf Single Mixed. Above varieties mixed..... Oz. 50¢..... GOD-4X. 10¢

DOUBLE DWARF VARIETIES:

- Sweetheart. Azaleiflora; bright shell pink; 12"..... GOD-5H. 15¢
- Sybil Sherwood. Double flowered; pretty salmon-pink; 12"..... GOD-5S. 15¢

TALL UPRIGHT SINGLE VARIETIES: These are nice for border, bedding; 2-3 ft tall.

- Duke of York. A rich scarlet..... GOD-6D. 15¢
- Fairy Queen. White and crimson..... GOD-6F. 15¢
- Gloriosa. (Lord Roberts) Blood-red..... GOD-6G. 15¢
- Pelargonium. Bluish pink, blotched carmine..... GOD-6P. 15¢
- Scarlet Queen. Brilliant scarlet..... GOD-6S. 15¢
- The Bride. Crimson and white..... GOD-6B. 15¢
- Tall Upright Single Mixed..... GOD-6X. 15¢

WHITNEY: Very compact strain, dwarf and double, also known as Azaleaeiflora.

- Begonia Rose. Compact, brilliant rose..... GOD-7B. 15¢
- Lady Albemarle. Compact, crimson..... GOD-7L. 15¢
- Whitney Blend. All compact double varieties..... GOD-7X. 15¢

GOMPHRENA. (gom-FREE-nah) Amaranthaceae.

Useful for bedding and cutflowers as well as for dried or everlasting flowers. All HA

G. GLOBOSA: Start seeds indoors for better germination; flowers are clover-like.

- Rose..... GOMP-2Z. 15¢
- Striped..... GOMP-2S. 15¢
- Orange-yellow..... GOMP-2Y. 15¢
- White..... GOMP-2W. 15¢
- Purple..... GOMP-2P. 15¢
- Piccole. A dwarf form with wine-red flowers..... GOMP-2C. 15¢
- Mixed. Above varieties mixed..... GOMP-2X. 10¢

GORDONIA. (gor-DOH-nee-ah) Theaceae.

Trees and shrubs from warm regions. The American species (*G. alata*) known as the Franklinia tree, is rare and not many are known. It requires an acid soil and is hardy up to Mass. We wish reports on them along the northern planting area as we would like to map this line in a future issue.

- atalamaha. FRANKLINIA TREE. To 20 ft; fls 3" ac..... GODO-1. Seeds 5¢ each

GOURDS.

Under this heading are listed the cucubits that have hard shells and grown for ornament. They may be divided into large small fruited varieties. They are very ornamental, are easily grown from seed planted outdoors as soon as the soil is warm. If started indoors, grow them in pots as they resent root disturbance. They will stand no frost. See articles during the fall months as to harvesting, etc.

SMALL FRUITED VARIETIES: Mainly Cucubita pepo.

- Egg, White. About the size of a lemon..... GORD-1E. 15¢
- Flat Striped. Dark green with yellow stripes..... GORD-1F. 15¢
- Miniature. Fruits round, dark green and striped yellow..... GORD-1M. 15¢
- Orange. Orange color and shape..... GORD-1R. 15¢
- Pear-bicolor. Half green, half yellow; pear-shaped..... GORD-1B. 15¢
- Pear. White fruits; pear-shape..... GORD-1P. 15¢
- Pear Striped. Dark green striped with longitudinal white bands..... GORD-1L. 15¢
- Spoon..... GORD-1S. 15¢
- verrucosa. Small green, very warty fruits..... GORD-1V. 15¢
- Small Fruited Varieties Mixed..... GORD-1X. 10¢

GOURDS: Continued on Page 118.

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Planting Lilies In the Fall

Fall is the ideal time to plant Lilies and as long as your bulbs are freshly dug and promptly shipped, it makes little difference how late in the fall they are planted. *L. candidum* is the only exception and it should be in the soil in August, if possible, for it is the only Lily that makes an autumn basal growth.

I believe many Lily growers make a mistake in buying too large a bulb. The smaller ones will produce just as well and will develop faster and without any set back while the larger bulbs will produce a good bloom the first year but very liable to be disappointing the following season.

Where the soil is reasonably good, and on a sandy loam order, it is well not to plant too deeply. It is better to get them in too shallow rather than too deep. Species like *Henryi* should not be planted in peaty soil. All the stem rooting Lilies like the *Auratum*, *Brownii*, *Regals*, should be mulched in the spring and followed up during the summer with more mulching. All Lilies should be mulched and six inches is better than one but the tops should have the air and the proper amount of sunshine. A handful or two of sand under and around each bulb is good insurance.

Those who are fortunate in having a woods or wood lot suitable for *Giganteum*, should plant them in quantity. They do best in shade, that sort of shade that comes from tall trees which allows a limited amount of light to trickle thru the leaves. Plant them shallow, one inch or so of soil over them. The bulb perishes after the plant has flowered but many new ones are formed each year. A bed of a hundred is a sight, when in bloom. They grow to 8 to 12 ft. high. When established in the woods they thus are well mulched.

The *Auratum*s are one of the most satisfactory of all Lilies. I think it is far superior to many of the newer creations; try planting the smaller sized bulb and do not cover with more than 4 inches of soil. If a good sized bed is being established it would be well to prevent the flowers from developing the first year so that all the strength can go to establishing a strong plant.

A good many Lilies are now being grown from seed. Millions of bulbs result, which cannot be thrown away and a great many find their way, under high sounding names, into flower gardens. In practically every case where these various hybrids are offered, the fields are carefully gone over when in bloom and every plant with any show of value is tagged and separated from the rest of the field. Stick to the named varieties, with a record behind them.

POTTING UP, OFF and ON.

The expressions are much used by gardeners and while they are common expressions, it may not be out of place to explain them here.

Potting on means to pot a plant from one pot to a larger one.

To pot up, means potting the seedlings or cuttings from the seed pans to pots. Repotting, one removes as much of the old soil as is possible and then repotting to the same size or a larger pot.

Always use a coarse sand in potting or in seed beds. When too fine a sand is used it tends to compact the soil too much.

Hirsutus: (heress-YEW-tus), hairy.

THE HERB LIST

ANGELICA (an-JEL-i-kah)

(*Angelica archangelica*) A stout herb to 6 ft. growing on low ground and makes a striking picture by side of stream, perennial. Pkt. 20¢; Oz. 60¢.

ANISE. (AN-is)

(*Pimpinella aneum*) Parsley Family, the leaves and seeds used for flavoring in cookery and also in medicine. Annual to 2 ft. and easily grown. Sow seed in April in rows where plants are to grow. Pkt. 20¢; Ounce 60¢.

BALM, LEMON.

(*Melissa officinalis*). An aromatic sweet herb of Mint Family, used in seasoning, in liquors and medicine; grows 2 ft. high. leaves have a decided lemon odor and flavor. Easily grown from seed sown late in fall or early in spring. Pkt. 20¢; Ounce \$1.00.

BASIL, Bush or Dwarf.

(*BAZ-il*) (*Ocimum basilicum minimum*) Sweet herb of Mint Family, esteemed for flavoring, is an annual, tender and should be planted after frost danger is past. Easily grown from seed, started indoors or planted directly to garden, thin plants to 6-12" apart and in rich soil plants will continue to develop leaves after being cut. Cut the leaves as blossoms form, hang up in bundles to dry; plants can be lifted in fall for green leaves during the winter. This type grows 2 ft high. Pkt. 15¢; Oz. 30¢

BASIL, Tall Green.

A taller strain of Basil and much used in a commercial way by market gardeners. Pkt. 15¢; Oz. 30¢; 1/4 lb. \$1.30

BORAGE (BUR-ahj)

(*Borage officinal*) An attractive plant 18" high, with pretty sky-blue flowers in clusters, liked by bees. Upper leaves and flowers used in salads, the lower leaves are cooked like Spinach; the fresh foliage has a cucumber flavor and adds a cooling touch to salads. Space plants 2-3 ft. apart. hardy annual. Pkt. 15¢; Oz. 50¢

CARAWAY (KAR-ah-way)

(*Carum cavi*) An annual or biennial whose seeds are used to season bread, cakes, confections and cheeses; easily grown from early spring grown seeds, where plants are to stand, for two seasons. The young shoots and leaves may be used to flavor salads. Sow a few radish seed to mark your row. Pkt. 15¢; Oz. 35¢

CARDOON (kahr-DOON) Smooth Spanish

(*Cynara cardunculus*). Grown for its blanched stalks and thick main root, sow seeds early where plants are to grow, in hills 18-24" apart. Water during dry periods to keep foliage tender, in fall treat like Celery and later they will be ready to eat like Endive or Celery. Pkt. 15¢; Ounce 90¢

CELERY, Soup

Plain leaf type best suited for use in flavoring soups, either in green state or dried. Pkt. 15¢; Oz. 35¢

CHERVIL (CHUR-vil)

(*Anthriscus cerefolium*) Plain leaf Chervil, of Parsley Family, whose Parsley-like leaves are used for flavoring salads. Grows 18-24". Sow seeds in early spring or late fall, in any good garden soil, some shade best and produces leaves for use in 6-10 weeks. Pkt. 15¢; Oz. 40¢

CHERVIL, Curled Leaf

Similar to the plain leaf type except that the curled leaves are more used for garnishing, similar to Parsley. Pkt. 15¢ Oz. 40¢

CHICORY, Brussels Witlof. (Special Strain)

(*Chicorium intybus*) A perennial herb, the roots of which can be dried and used as a substitute for coffee; the leaves are used when young and tender as greens or those of the older plants are blanched much as is Celery. The leaves are forced during fall and winter to produce loose white or pink leaves or Witlof or French Endive. Sow early in spring, thinly in rows 18" apart, thin to 6 in. row. Dig roots in fall, cutting tops to 1" and store in pit or root cellar; for Witlof, shorten the roots to 8-9", cutting the lower end, bury upright in damp sand or soil covering tops with 6-8 inches of the soil and keep at Continued on Page 119

GRINDELIA - GYPSOPHILA - HEBE

GOURDS: Continued from Page 117.

LARGE FRUITED VARIETIES: Mostly Cucurbita leucantha.

—Apple Shaped. Green.....	GORD-2A. 15¢
—Bottle Shaped. Green.....	GORD-2B. 15¢
—Dipper.....	GORD-2D. 15¢
—Hercules Club.....	GORD-2H. 15¢
—Nest Egg.....	GORD-N. 15¢
—Orange.....	GORD-2G. 15¢
—Pear.....	GORD-2P. 15¢
—Turk's Cap.....	GORD-2X. 10¢
Oz. 25¢; 1/4 lb. 90¢	

GRINDELIA. (grin-DEE-le-ah) GUM PLANT. Compositae.

Western U. S. perennials bearing large yellow ray or disk flowers and doing well on poor soils.

—*squarrosa*. Yellow fls 3/4" across; 2 ft; HB or HP..... GRIN-10. 15¢

GYPSOPHILA. (gip-SOFF-il-ah) BABY'S BREATH. Caryophyllaceae.

Hardy annuals and perennials of great value both as cutflowers and plants in the rock garden or border. The flowers are small and numerous, in yellow, white or rose. *G. paniculata* is also grown for its dried flowers which are used in bouquets, etc.

G. ELEGANS: Hardy annuals grown mainly for cutflowers; they are very valuable for this purpose. Succession planting can be made every week during the spring months. In the South they should be planted in the fall; blooms in 6-8 weeks from planting; 2 ft.

—Carmine.....	GYP-5C. 10¢
—Crimson.....	GYP-5S. 10¢
—Rose.....	GYP-5Z. 10¢
—Blend of the Above Colors.....	Oz. 40¢ Lb.\$2.00 GYP-5X. 10¢

GYPSOPHILA SPECIES:

— <i>cerastioides</i> . Mouse-ear <i>G. Downy</i> , cr, 3"; fls white; RG, HP.....	GYP-3. 20¢
— <i>Manginii</i> . Mongolian <i>G. Rosy</i> white fls in small panicles; HP.....	GYP-12. 25¢
— <i>muralis</i> . Rose fls; dwarf, good RG; HA.....	GYP-13. 20¢
— <i>Oldhamiana</i> . Bright flesh pink fls; mid-summer to frost; 3'; HP.....	GYP-15. 15¢
— <i>pacifica</i> . Pale rose or purple fls; 3'; Siberia; HP.....	GYP-16. 20¢
— <i>paniculata</i> . Baby's Breath. Comes in several varieties and makes an airy display in the border with its mass of small white flowers; very popular; makes fine dried flowers.	
— <i>Snowstorm</i> . Grows 3' and in nice formed plants.....	GYP-18TS. 15¢
— <i>Single White</i> . Used mainly by market growers; Oz. 25¢ Lb. \$4.25.....	GYP-18.15¢
— <i>repens</i> . Pink. Trailer to 6"; blooms early; HP.....	GYP-21P. 15¢
— <i>White</i> . The white flowered form.....	GYP-21W.1 5¢

HEBE. (HEE-bee) Scrophulariaceae.

Shrubs and small trees, mainly from New Zealand, formally classified with the Veronicas. They can be grown out doors in mild climates and some under glass in the North; some make nice evergreen hedges.

—*macrantha*. Rare; largest flowered; pure white; sun; 1 ft; HSH..... HEBE-46(W). 30¢

HEDYCHUM. (hee-DIK-e-um) GINGER LILY. Zingiberaceae.

Robust tropical perennial plants mostly from India. Grown in the GH or in the far South. Flowers are showy and fragrant; rich soil and plenty of moisture.

— <i>coccineum v. angustifolium</i> . Shorter lvs; salmon-pink fls 6'; TP.....	HEDY-4A. 25¢
— <i>coronarium</i> . Garland Fl; white; 6'; very fragrant; TP.....	HEDY-5. 25¢
— <i>densiflorum</i> . White fragrant fls; 6'; TP.....	HEDY-6. 25¢
— <i>gracile</i> . Greenish white fls; 2 ft; TP.....	HEDY-13. 25¢
— <i>spicatum</i> . Yellow fls; 3 ft; TP.....	HEDY-16. 25¢
— <i>thyrsiforme</i> . White fls in dense spikes; 6 ft; TP.....	HEDY-18. 25¢
— <i>Hedychium Blend</i> . All kinds mixed.....	HEDY-X. 20¢

HELENIUM. (he-LEE-ne-um) Compositae.

Mostly perennial plants; some annual, flowering in the summer and fall. Thrive in fairly rich soil and a sunny position; makes a fine plant in the border or wild garden. Easily grown from seed started early or to late July.

— <i>autumnale</i> . Heads 2" ac; lemon-yellow disk yellow; 6'; HP.....	HELE-2. 15¢
— <i>Hoopesii</i> . Fls 3" ac; 3 ft; HP.....	HELE-6. 20¢
— <i>Helenium Blend</i> . All kinds in stock.....	HELE-X. 15¢

HELIANTHEMUM. (hee-lee-ANTH-em-um) SUN-ROSE. Cistaceae.

Perennials thriving in dry limestone soils, in full sunshine. There are many species below two feet and planted in the border or the rockery as well as for ground cover. Colors are yellow, rose, white or purple, in July to September.

—*Helianthemum Blend*. Mixture of different kinds..... HELM-X. 25¢

HELIOPSIS. (hee-le-OP-sis) Compositae.

Hardy perennials with sunflower-like flowers 2 inches across and growing to 5 ft tall. They are nice in the border and make good cutflowers. Grow them the same as Sun-flowers and seed started as late as July will bloom the following year.

— <i>helianthoides</i> . Numerous yellow heads 2 1/2" ac; 5 ft; HP.....	HELO-1. 15¢
— <i>scabra major</i> . Golden yellow fls; 5 ft; HP.....	HELO-4. 15¢

HELLEBORUS. (hel-le-BO-rus). CHRISTMAS ROSE, HELLEBORE. Ranunculaceae.

Perennial plants blooming early in the spring and in mild climates, during late winter. Thrive in rich moist soil, partial shade. They are also forced under glass.

— <i>niger</i> . Christmas Rose; white; 1 1/2 ft; hardy; HP.....	HELB-10(C). 30¢
— <i>odorus v. cupreus</i> . Copper colored fls; 15"; HP.....	HELB-12(C). 40¢
— <i>v. atrosanguineum</i> . Red fls; HP.....	HELB-12A(C). 50¢
— <i>olympicus</i> . White fls; HP.....	HELB-13(C). 50¢

HEMEROCALLIS. (hem-er-oh-KAL-is) DAY LILY. Liliaceae.

A genus of mostly tuberous-rooted perennials with lily-like flowers and narrow grass-like leaves. They are all of simple culture, either grown from seeds which produce seedlings or from roots for particular varieties. The commonly grown garden forms are hybrids of various species. See special list for roots of named varieties.

— <i>Peerless Blend</i> . Seed saved from the best varieties.....	HEME-H. 20¢
— <i>Hybrids</i> . From hand pollinated flowers including pink and "reds".....	HEME-14B. 20¢
—Part hand and part bee pollinated including pink and "reds".....	HEME-14M. 15¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

HERACLEUM - HOLLYHOCKS

HERACLEUM. (her-ah-KLEE-um) Umbelliferae.

Herbaceous perennials used for bold effect in large border. They bear enormous umbels of minute white or pink tinted flowers; thrive in rich soil.

—**Mantegazzianum.** Deeply cut white fls in umbels; 4 ft ac; 9 ft; HP..... **HERA-2. 20¢**

HESPERANTHA. (hes-per-AN-thah) Iridaceae.

Tender S. Af. bulbous plants very similar to Ixias; flowers star-shaped, opening in the evening, fragrant; they like sunny positions, sandy loam soil with some peat. Treat as a pot plant in the North.

—**Bauri.** Bright rose-red fls in loose spikes; 2 ft; TBb..... **HSPR-1. 50¢**

HESPERIS. (HES-per-is) ROCKET Cruciferae.

Hardy biennials and perennials of erect branching habit and bearing white, rose or mauve-purple flowers in pyramidal spikes; excellent cutflowers; June-July; 1-3 ft. tall. They are fragrant. Sow seeds any time up to August for flowers the next season.

H.MATRONALIS: Sweet Rocket. The common garden forms are of this species. They are perennial but sometimes only biennial; hardy in the North; sow seed a year before they are to bloom.

—**Mixed.** White and the red mixed..... **HESP-6X. 15¢**

—**nana candidissima.** Dwarf form in pure white flowers..... **HESP-6C. 15¢**

HESPEROYUCCA. (hes-per-oh-YUK-ah) Liliaceae.

Only one species from S. Calif. much like the Yucca. Hardy only in mild climates.

—**Whipplei.** Creamy white fls, 2" ac, fragrant, in nodding pan; TP..... **HSPR-1. 25¢**

HEUCHERA. (HEU-her-ah) ALUM-ROOT. Saxifragaceae.

Herbaceous perennials, usually of dwarf compact habit flowering in June-Sept, valuable in the low border or rockery. Grow in sunny place, good loamy soil, and producing mats of deep green leaves. The flowers are bell-shaped; excellent for cutting. germinate seeds warm and in light.

—**cylindrica v. glabella.** Yellowish green fls; 2½ ft; HP..... **HEU-7G. 25¢**

H. SANGUINEA: Commonly grown species in gardens, founds on cliffs and hills.

—**Spitfire.** Very pretty large rich scarlet fls..... **HEU-20S. 20¢**

—**Hybrids.** Different colors and forms..... **HEU-20H. 20¢**

HIERACIUM. (hy-er-AY-shi-um) Compositae.

Perennial plants with red, orange or yellow flowers some of which are called Hawkweed. Easily grown. The leaves are in rosettes with the flowers in heads on erect spikes. The flowers should be cut off directly after flowering and the plants kept from spreading in the garden too much.

—**aurantiacum.** Devil's Paint Brush; orange; 15 in; HP..... **HIER-3(C). 30¢**

—**faeröense.** **HIER-6. 25¢**

—**villosum.** Bright golden yellow; 2 ft; HP..... **HIER-19. 25¢**

HOLLYHOCKS. (Althaea rosea).

These are all perennials, excepting one or two forms which are treated as annuals. They do best in a rich soil, and in a warm position sheltered from strong winds. Seed can be sown any time up to August, so as to get a good start by fall when they flower the next year.

ANNUAL VARIETIES: Plant early in the spring when they will flower in July.

—**Indian Chief.** Half double, deep amaranth-purple fls; 4 ft..... **HOLY-3C. 15¢**

—**Indian Summer.** Double pink flowers; 4 ft..... **HOLY-3S. 15¢**

—**Annual Mixed.**..... **HOLY-3X. 15¢**

PERENNIAL VARIETIES:

—**Allegheny, Mixed.** Semi-double fls, 5" ac. petals fringed..... **HOLY-2A. 15¢**

—**Colorado Sunset.** NEW buff-apricot; pretty double type..... **HOLY-2C. 20¢**

—**Empress Strain.** Enormous laced and curled fls in many colors..... **HOLY-2E. 15¢**

—**Imperator.** Fringed fls in pink to cerise-salmon, 5 ft..... **HOLY-2M. 15¢**

—**Triumph.** Double, waved and fringed fls; 3-4 ft..... **HOLY-2T. 15¢**

CHATER'S DOUBLE HOLLYHOCKS: These grow 6 feet tall and is the best strain of double Hollyhocks. The colors and blends are exceptionally nice.

—**Carmine.** **HOLY-4C. 15¢**

—**Carmine Rose.** **HOLY-4R. 15¢**

—**Cream.** **HOLY-4M. 15¢**

—**Lavender.** **HOLY-4V. 15¢**

—**Lilic.** **HOLY-4L. 15¢**

—**Pink.** **HOLY-4K. 15¢**

—**Purple.** **HOLY-4P. 15¢**

—**Sulphur Yellow.** **HOLY-4Y. 15¢**

—**Violet.** **HOLY-4T. 15¢**

—**Chaters Mixed.** Made up in good color blend..... **HOLY-4X. 15¢**

—**Hollyhock Mixture.** This is made up of all kinds. ¼ lb. \$2.50..... **HOLY-X. 10¢**

HOMOGYNE. (ho-MO-gee-ne) Compositae.

Small perennials with white or purple heads, found in the mountains of Central Europe. Thrive in moist soils.

—**alpina.** Yellow fls; 6 inches high; HP..... **HOMO-1(C). 30¢**

HORMINUM. (hor-NYE-mum) Labiatae.

One perennial native of the Pyrennes and Alps and grown in the rockery.

—**pyrenaicum.** Blue fls ¾" long in summer; 1 ft; HP..... **HORM-1(C). 30¢**

HYACINTHUS. (hy-a-CIN-thus) HYACINTH Liliaceae.

Bulbous plants of which the common garden Hyacinth is the best known. Some species formerly listed here belong to Galtonia and Muscari. For bulbs see the fall bulb listings. They are easily grown from seed. The large Hyacinth best from the bulb.

—**amethystinus alba.** Nodding white fls; 6" tall; Spain; HP..... **HYAC-1. 20¢**

—**ciliatus.** (H. azureus) Erect racemes; 6" tall; HP..... **HYAC-2. 25¢**

HYOSCYAMUS. (hy-oh-SY-ah-mus) HENBANE. Solanaceae.

Funnel-shaped flowers in spikes, best in poor soils. They should be used in large borders; some are grown for medicinal plants.

—**niger.** Greenish yellow fls veined purplish; 2½ ft; HB or HA..... **HYOS-3. 20¢**

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

THE HERB LIST

Continued from Page 118

about 60 degrees F; in 2-3 wks the blanched heads 5-6" long can be cut for use. **Pkt. 15¢; ¼ lb. \$2.00.**

CHICORY, van Spronsen's Variety.

A special select variety of Brussel Witlof.

Pkt. 15¢; Oz. 35¢; ¼ lb. \$1.90.

CHIVES (Chy-vz)

(Allium schoenoprasum) Perennial developing a thick grass-like tuft and valued for their mild onionlike flavor, the green stems being used in salads, soups, etc. The oftener the leaves are cut the stronger the plant will grow. Sow seeds early in the spring, in rows 2-3 feet apart and thin plants to 6" apart. **Pkt. 15¢; Oz. 90¢**

CORN SALAD

(Valerianella locusta, variety oiltoria) Dutch Broad Leaf, Large Seeded. Also known as Fetticus, Vetticost and Lambs-lettuce. Grown in early spring or late fall as a pot-herb or salad; seed sown in early fall, some plants will get large enough for fall use and the balance with mulching can be carried over for early spring plants. Sow in early spring in rows 12 inches apart, they do not do well during the hot summer. The leaves are mixed with mustard, pepper grass or water cress, as a salad. **Pkt 15¢; Oz. 60¢**

CRESS

(Lepidium sativum) Pepper Grass. —**Plain Leaved.** Annual growing quickly and making the best greens for garnishing and for salads; the richer the soil the better, plant in rows 12" apart in earliest spring and at weekly intervals till middle of May. **Pkt. 15¢; Oz. 25¢; ¼ lb. 40¢**

—**Curled or Double Leaved.** Makes nicer leaves for garnishing as well as for salads. **Pkt. 15¢; Oz. 25¢; ¼ lb. 45¢**

—**Large Leafed French.** A large leaf strain. **Pkt. 15¢; Oz. 25¢; ¼ lb. 45¢**

CRESS, American Upland or Winter Cress

(Barbarea vernaprococ) A hardy biennial sown early in the spring in rich soil, the leaves are ready in late mid-summer; being hardy they will be ready for use in the spring following cutting before flower stems develop. **Pkt. 15¢; Oz. 30¢; ¼ lb. 80¢**

CRESS, True Water

(Nasturtium officinalis) Low trailing perennial growing in wet ground and springs. easily grown from seed and is best for greens in early spring or fall. **Pkt. 20¢; Oz. 90¢**

DILL

(Anethrum graveolens) Parsley Family grown for its seeds, which are used in flavoring of dill pickles. Sow early in the spring or late in fall, in rows 18" apart, thinning to 8-10 in. in row. When ripe cut the heads, drying them on canvas and then thrashing out the seeds, which can be stored in cloth bags in a dry place. **Pkt. 10¢; Oz. 25¢; ¼ lb. 40¢**

FENNEL, Long Sweet

(Foeniculum vulgare) A hardy perennial grown as an annual for its aromatic seeds and fragrant young leaves, both used in flavoring; seeds are slow to germinate, so sow early in the spring, give full sun any ordinary care. **Pkt. 15¢; Oz. 50¢**

—**Florentine.** (F. vulgare, var. dulce) Has greatly enlarged leaf bases from a bulb-like base, 3-4 in. in diameter; the bulbs are blanched by covering with earth and then cooked as a vegetable but the stalks which resemble Anise-flavored Celery, can be eaten raw. Make plantings every two weeks, growth rapid. **Pkt. 20¢; Oz. 60¢**

SWEET FENNEL, Sicily

Large Sweet Broad Bottom. Similar to Florentine or Florence Fennel, and having a very broad base or 'apple' is extra tender. **Pkt. 15¢; Oz. 30¢; ¼ lb. 85¢.**

HOARHOUND

(Marrubium vulgare) An aromatic perennial with woolly white foliage and whitish flowers; used mainly in flavoring candies; plant thrives in dry soil. **Pkt. 20¢**

HYSSOP (HIS-up)

(Hyssopus officinalis) Hardy perennial herb or sub-shrub grown as a culinary and medicinal herb and as an ornamental;

Continued on Page 122

Saier's GARDEN MAGAZINE

DIMONDALE, MICHIGAN.

VOL. 2. No. 15. SEPTEMBER 1951.

Owner and publisher of **Saier's Garden Magazine**, Harry E. Saier, Dimondale, Mich.

Issued each month. Subscription price \$2.00 per year; 2 years \$3.00; single copies 25 cents.

Send all seed orders to the **Pioneer Seed Company, Dimondale, Michigan.**

We have openings in many localities for someone to take subscriptions.

We have been unable to get out the usual three 16 page booklets during the past month due mainly to lack of time, which is a different way of saying, lack of help, but this will all be made up by January. By the way as soon as the seed lists are completely set in type, which will still take a month or two, these will be printed in one 6 x 9 book for distribution about the first of the year. It will contain as near a complete list of all flowering plants for which seed is available as is possible to compile. In this listing will be the seeds of several specialists in rare flowers; besides the seeds, there will now be added many plants, not offered before. We are sure you will find this new book something valuable as a source index. It will be mailed free by the Pioneer Seed Company.

We have been adding a great many new subscribers thru the efforts of various Garden Clubs. Briefly, we have allowed a substantial discount on the subscription price which in turn goes to the Club treasury and thus helping to complete various Club projects; we will be pleased to hear from any Club interested in raising a fund for some project.

In this connection, we wonder if there would be sufficient interest by Clubs to place attractive identification labels to especially fine specimens of trees or flowering shrubs, etc., if we arranged for the signs in quantity and then to distribute them to the Clubs interested, the payment for the signs to be either in cash or, as we would prefer, in the discount in new subscriptions.

There are many localities, where many visitors come during the year and it would be a highly desirable project for the local Garden Club to see to this interesting work. Let us hear from some of our readers on this subject.

We receive letters every day asking for back issues to complete files; we are sorry not to be able to supply these. The only possible way would be in the returned copies, which are in limited numbers and are always mailed out the day they arrive. The subscription price barely covers the cost of printing and those who wish all issues, should subscribe; its \$2.00 per year of 12 issues.

We receive a great many comments on the make-up of the magazine, all of which we actually do appreciate, for it is necessary to deliver what is in need. Margaret Gilmour of Vineland, N. J., writes, "I take four America garden magazines and three English ones but for practical help and good reading interest, yours is tops."

Cornatus: (kor-oh-NAY-tus; crowned.

Corymbosus: (kor-im-BOH-sus) with corybms.

Crinitus: (krin-NYE-tus), hairy.

Crocus: (KROH-see-us), saffron-yellow.

Gratus: (GRAY-tus), pleasing.

HYPERICUM - IBERIS - INULA

HYPERICOPHYLLUM.....

—**compositarum.** Pretty S. Rhodesian; 3-4 ft; bright orange fls..... **HYPE-1.** 25¢

HYPERICUM. (hy-PER-i-kum) ST JOHNSWORT. Hypericaceae.

Very decorative perennial plants and shrubs usually with bright yellow flowers and many showy stamens. Grow best in a sand loam soil in partial shade. They are not real hardy in the North but if planted in a sheltered place and given winter protection they can be grown even in Michigan.

—**Coris.** Sub-sh to 1 ft; fls ¾" ac; for S only; TP..... **HYPR-18.** 25¢
—**Hookerianum.** Sh to 6 ft; fls 2½" ac; for far South..... **HYPR-40.** 25¢
—**olympicum.** Shrubby, 9 in. high; lge deep golden yel fls; HHP..... **HYPR-58(W).** 30¢

IBERIS. (y-BEE-ris) CANDYTUFT. Cruciferae.

These come in half hardy annuals and evergreen perennials and easily grown from seed. The annuals can be sown the later part of May, they germinate quickly and flower early. In the South the seed can be sown in the fall. Keep the plants growing and well watered. Clip seed pods off as the plant easily goes to seed. All are rather low plants and make excellent flowers.

—**affinis.** Erect to 16"; fls white with lilac tinge; HA..... **IBER-1.** 15¢
—**amara.** Rocket Candytuft; erect to 12"; fls white; fragrant; HA..... **IBER-2.** 10¢
—**coronaria.** Fls with white crown; pretty type..... **IBER-2C.** 10¢
—**Empress nana.** Dwarf large white spike..... **IBER-2E.** 15¢
—**princeps.** Very dwarf but large heavy white spike..... **IBER-2P.** 15¢
—**White Rocket.** Large white spike..... **IBER-2R.** 15¢
—**Miniature Gem.** New, 4", with 4-6 spikes per plant..... **IBER-2M.** 15¢
—**jucunda.** (Aethionema coridifolium). 4-10"; fls rosy lilac in racemes; HP..... **AETH-4.** 25¢
—**gibraltarica.** Edging; large purple fls in flat clusters; to 10"; TP..... **IBER-5.** 15¢

ILEX. (Y-lex) HOLLY. Aquifoliaceae.

Evergreen and deciduous trees and shrubs having glossy leaves and brilliantly colored berries. They are very ornamental but some species are not hardy in the far North. They require an acid soil and the germination of the seed will be more successful if the soil used is mostly peat or decayed saw dust. Seed should be stratified as they germinate the second year.

—**aquifolium.** English H. Best in NW; hardy to Ohio, very pretty; 40'..... **ILEX-2.** 25¢
—**cornuta.** Shrubby to 10 ft; hardy in E. States..... **ILEX-9.** 25¢
—**crenata.** Japanese H. To 20 ft; fine for the garden..... **ILEX-10.** 25¢
—**fragilis.**..... **ILEX-14.** 25¢
—**glabra.** Inkberry. Hardy in N; black fr; for shade; evergreen..... **ILEX-17.** 25¢
—**insignis.** Small evergreen tree for the lawn..... **ILEX-20.** 25¢
—**laevigata.** Winterberry. Good; scarlet berries in clusters; swamps; 6'..... **ILEX-21.** 25¢
—**opaca.** American H. Dull red berries, hardy; the Xmas Holly; to 50'..... **ILEX-28.** 25¢
—**verticillata.** Black Alder. Sh to 10 ft; bright red berries; hardy..... **ILEX-37.** 25¢
—**Mixed Ilex.** All species mixed..... **ILEX-X.** 25¢

See our Tree and Shrub Seed List in the fall for Ilex Seed by the pound.

INCARVILLEA. (in-kahr-VIL-ee-ah) Bignoniaceae.

Showy and fairly hardy perennials from China, producing terminal clusters of red and yellow tubular flowers above basal group of vivid green leaves. Thrives in a well drained, rich light soil, and sunny place. Plant seeds up to August for next season flowering; give winter protection in the North.

—**Delavayi.** Rose-purple fls, yellow tubes; very nice; 2 ft; HP..... **ICAR-2.** 20¢
—**grandiflora brevipes.** RG; crimson-purple fls, gloxinia-like; 10"; HP..... **ICAR-4B.** 35¢
—**Olgae.** Pale pink fls 1" ac; shrubby, to 3 ft; HP..... **ICAR-7.** 25¢
—**variabilis.** Cream to pale rose tubular s, ever-bearing; easy; HA..... **ICAR-9.** 25¢
—**Mixed Incarvilleas.** All kinds mixed..... **ICAR-X.** 25¢

INDIGOFERA. (in-di-GO-fe-rah) INDIGO. Leguminosae.

Ornamental plants for borders and in shrubbery, many of which are not hardy in the far North. Some can be grown in the greenhouse or for window treatment.

—**Dosua.** Red fls in racemes; low shrub; India; TP..... **INDI-5.** 25¢
—**Potaniini.** Lilac-pink fls in racemes; hardy in North; sh to 5 ft..... **INDI-13.** 25¢

INULA. (IN-yu-la) Compositae.

Showy herbaceous perennials, most of which are hardy in the North; with large daisy-like heads of yellow or orange flowers. They make a brilliant display. Grows well in average soil but requires a sunny position.

—**glandulosa.** Solitary yellow heads 4 ft; HP..... **INUL-6.** 15¢
—**hirta.** Yellow heads, 2 inches ac; July-Aug; to 15 in; HP..... **INUL-10(C).** 30¢
—**Oculus-Christi.** Pretty yellow heads; 2-3 ft; HP..... **INUL-17.** 25¢
—**Royaleana.** Orange-yellow heads, one of the best; 2 ft; HP..... **INUL-19.** 25¢
—**salicina.** Golden yellow, 1½" ac; 2 ft; HP..... **INUL-20.** 20¢
—**V. aspera**..... **INUL-20A.** 25¢
—**thapsioides**..... **INUL-23.** 25¢
—**Inula Mixture.** All species mixed..... **INUL-X.** 20¢

IPOMOEA. (y-poh-MEE-ah) MORNING GLORY. Convolvulaceae.

Ipomoeas are mainly twining annual and perennial vines. The genus is widely distributed and comes in many kinds and habits. They are all easily grown from seed; for better germination file or cut a small notch in the outer covering. They are all tender and should be planted after all danger of frost is past. See Convolvulus and Quamoclit for other forms closely related.

I. PURPUREA: The common garden Morning Glory; grows 6-8 feet high and makes ideal vines for fences, etc. Best in rather dry sandy soil; not too much watering
—**Cornell.** Beautiful cornelian red, bordered with white; pretty green fol..... **IPOM-1C.** 15¢
—**Heavenly Blue.** Sky-blue shading golden yellow in throat; early strain..... **IPOM-1H.** 15¢
—**Pearly Gates.** Free blooming pure white, faint creamy sheen in center..... **IPOM-1P.** 15¢
—**Rose Marie.** Only double; deep rose; early flowering..... **IPOM-1R.** 15¢
—**Ssaret O'Hara.** Dark wine-red; attractive foliage..... **IPOM-1S.** 15¢
—**White Magic.** Large fleecy white blending to cream in throat..... **IPOM-1W.** 15¢
—**Red, White and Blue.** The three colors equally mixed..... **IPOM-1R.** 15¢
—**Large Flowered Types Mixed.** Above varieties..... **Oz. 75¢.** **IPOM-1X.** 15¢

—**bona-nox.** (Calonyction aculeatum) Moonflower; white fls..... **IPOM-4.** 15¢
—**dissecta.** Twining per; fls white with purple throat; Texas..... **IPOM-8.** 15¢
—**Nil.** Imperial Japanese M. G.; many very pretty colors..... **IPOM-19.** 15¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

ISATIS - KALANCHOE - LARKSPUR

ISATIS. (Y-sah-tis) WOOL. Cruciferae.

Annual, biennial and perennial plants. They are erect or branching with small yellow flowers from May to July; native of Med. regions; easily grown.
—**glauca**. For border; fls in large yellow clusters; 4 ft; HP..... **ISAT-3. 15¢**

JASIONI. (jaz-e-OH-nee).....Campanulaceae.

Annual and perennials with blue or white flowers borne in heads and useful in the border or rockery; all are easily grown.
—**perennis**. Blue flowers in heads 1" ac; 1 ft; HP..... **JAS-5. 15¢**

KALANCHOE. (kal-an-KOH-ee) Crassulaceae.

Succulent perennials, shrubby in form with fleshy oval leaves and a mass of bright colored flowers that last for several weeks. Grown outdoors in the South and in the greenhouse in the North. For winter flowers start seed in the spring, using a gritty soil, sunshine, and plenty of water when growing.

- Blossfeldiana** v. **Ernest Thiede**. Bright red fls; 1 ft; fine; TP..... **KALA-3T. 35¢**
- lanceolata**. Orange fls on 2 ft stems; succulent; TP..... **KALA-13. 35¢**
- thyrsiflora**. Yellow fls ½" long; 2 ft; TP..... **KALA-30. 35¢**
- Kalanchoe Mixture**. All above mixed..... **KALA-X. 25¢**

KNIPHOFIA. (nip-HOH-fe-ah) TRITOMA, Torach Lily, Poker Plant. Liliaceae.

Most striking garden plants, flowering in the fall, with their dense cigar-shaped spikes of red or yellow tubular flowers. Seed sown indoors very early will flower same season, otherwise seed can be sown in August for next season flowering. In severe climates the plants can be dug up and stored in a frost free cellar.

- Pfitzer's Hybrids**. Large brilliant reds; HP..... **KNIP-1P. 15¢**
- Early Hybrids**. American grown strain; HP..... **KNIP-1E. 15¢**
- Uvaria Hybrids**. Large flowers, mixed colors; popular; HP..... **KNIP-18. 15¢**
- Royal Castle Hybrids**. A new color range and perfect form; HP..... **KNIP-18R. 20¢**
- Lubbe's Selections**. Extra choice German strain; HP..... **KNIP-18L. 20¢**
- vericrea Hybrids**. Creamy white and coral-red fls; early; HP..... **KNIP-19. 15¢**
- Kniphofia Mixture**. All the above mixed..... **KNIP-X. 15¢**

LACTUCA. (lak-TEW-kuh) Compositae.

Tall annuals and perennials of which only a few have ornamental value. The garden Lettuce belongs to this genus.

- Bourgei**. Bracts and rays lilac or blue fls; 6 ft; HP..... **LACT-2(C). 30¢**

LARKSPUR. ANNUAL DELPHINIUM. Ranunculaceae.

Listed here are the so-called annual garden Larkspurs. There are various types or strains and while usually grown as annuals, they are really biennials. In the South seed should be sown in the fall and in the North sow either late in the fall or real early in the spring, where plants are to grow. Usually the seed is drilled in rows 2 to 2½ feet apart. They are especially used for cutflowers and do best in the cool part of the season; for good germination the seed requires a cold period and thus fall sown seed always germinates better; this is one reason for poor germination.

COCKADE STRAIN: A new type especially liked by commercial growers. Tall, symmetrical plants bearing long branches of full double florets; 4 ft. tall, HA.

- Pastel Shades**. Soft pastel colors correctly mixed for cutting..... **LARK-2P. 10¢**
- Blue**. Rich lilac-blue color..... **LARK-2B. 10¢**
- White Cockade**. Pure white..... **LARK-2W. 10¢**
- Cockade Mixed**. Correct blend for cutflowers..... **LARK-2X. 10¢**

All Cockade Type: Oz. 60¢; ¼ lb. \$2.00; 1 lb. \$7.75., prepaid.

GIANT IMPERIAL STRAIN: Tall, upright, compact basal branching in habit and very popular for cutting. Large flower spikes of double florets; 4-5 ft.

- Blue Bell**. Beautiful mid-blue..... **LARK-3B. 15¢**
- Blue Spire**. Deep Oxford blue..... **LARK-3S. 15¢**
- Carmine King**. Improved; deep carmine-rose; holds its color..... **LARK-3C. 15¢**
- Dazzler**. Early flowering bright carmine..... **LARK-3D. 15¢**
- Exquisite Rose**. Beautiful rose pink..... **LARK-3R. 15¢**
- Gloria**. Deep rose on salmon..... **LARK-3G. 15¢**
- Los Angeles**. Brilliant pink on salmon..... **LARK-3L. 15¢**
- White King**. Pure white; large double florets..... **LARK-3W. 15¢**
- Miss California**. New, deep rose on salmon..... **LARK-3M. 15¢**
- Giant Imperial Mixed**. In correct blend for cut flowers..... **LARK-3X. 10¢**

All Giant Imperials: Oz. 80¢; ¼ lb. \$3.00; 1 lb. \$9.50. Prepaid.

LATHYRUS. (LATH-e-rus) PRENNIAL PEA. Leguminosae.

A large genus of vines and erect plants, both annual and perennial. The perennials require no particular care but the annuals should have a deep moist soil and sunshine. Keep seed pods picked for a longer blooming period.

- cyaneus**. Herb; deep blue; sun, well drained soil; 12 in; HP..... **LATH-7(W). 30¢**
- latifolius**. Perennial Pea. Vine to 9 ft; white, red, purple and rose; HP..... **LATH-16. 15¢**
- Pink Beauty**..... **LATH-16P. 20¢**
- Rose Pearl**..... **LATH-16R. 20¢**

LEONOTIS. (lee-on-NOH-tiss) LION'S EAR. Labiatae.

Annual and perennial plants or shrubs grown in the far South or in the greenhouse in the North, where they can be started indoors and grown outside during the summer, flowering in November and December.

- Leonurus**. Showy red-yellow or orange-red fls; 6 ft; TP..... **LEON-6. 30¢**

LEONTOPODIUM. (le-on-toh-POH-de-um) Compositae.

Low herbaceous tufted and woolly perennials; leaves basal; flowers in small heads.
—**alpinum**. Edelweiss; fine rockery or indoors in pots; sandy soil; HP..... **LEOT-1(C). 30¢**

LIATRIS. (ly-AY-tris) BLAZING STARS, GAY FEATHER. Compositae.

Perennial plants, very attractive all summer and into autumn, especially when massed in the border. Flowers are in spikes or racemes. Easily grown from seed and not difficult to grow.

- callilepis**. Purple fls; HP..... **LIAT-2. 15¢**
- pyncostachya**. Purple fls in dense spikes; 5 ft; HP..... **LIAT-15. 20¢**
- scariosa**. Purple fls; bracts purple tipped; 6 ft; HP..... **LIAT-16. 20¢**
- Liatis Blend**. All above mixed..... **LIAT-X. 15¢**

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Bromeliads

By Victoria Padilla

BILLBERGIA -- The Friendship Plant

There is a very popular plant in Southern California known as the "Friendship Flower." It is so called because it is easily propagated by its offshoots, which can be cut off the mother plant and given to any friends who might admire its odd inflorescence and bizarre coloring.

This is the *Billbergia nutans*, a member of the Bromeliad or Pineapple Family, native to the tropical Americas. For those who are looking for something different in house plants and one that will withstand the inclement conditions found in the modern home or apartment, the *Billbergia* should be considered. It will thrive in the darkest section of a room, forgotten, unwatered and still add a note of brilliance and verdure. While the life of the average house plant: Ferns, Dieffenbachias, Philodendrons and the like, is generally a matter of months, *Billbergias* will live for years.

Billbergia nutans, or the "Tropic Tassel" as it is sometimes called, is the commonest and hardiest of the varieties. It blooms once a year, around the holiday season, and its flowers are favorites with flower arrangers. Most of the hybrids are much more exciting, both as to foliage and flower, and are just as easy to raise.

All they want is a light well drained soil, such as you would give Begonias or Fuchsias, a little water kept in the heart or center cup of the plant, and that is all. Of course, if you can give them mottled sun light and a little humidity, so much the better; but they do not seem to be much affected by dryness of indoor atmosphere. They can take a surprisingly low temperature, most of them living through the last Southern California big freeze, which in some areas hit a low of 18 degrees Far. Usually, they are considered to be subtropical, and where snow covers the ground in winter, it is best to grow them indoors. *Billbergias* are air plants, in their native habitat, growing on the same trees where orchids may be found, so they get most of their nourishment from the air. Fertilizing is thus no problem.

One stalk of the plant is all that is necessary to get it started. Soon after it is planted, the *Billbergia* will send up side shoots, which in some cases multiply very quickly. The flower arises from the center leaf cluster and is generally overwhelming in its dazzling coloring. When the offshoots are five or six inches high, they may be removed with a sharp knife and put into another pot to start a new plant. Generally the offshoot will have no roots, and when one purchases them from growers they are usually this way, but this makes no difference, for as soon as the young shoot is on its own, it will form roots.

There are many fine, easy-to-grow varieties. One favorite is known as Meade Hybrid, which is in almost constant bloom. It has a large pink and blue tassel of a flower which has good lasting qualities. The leaves are a light green and slightly toothed. This plant is a very fast grower, makes a superb hanging basket, and is a general favorite in Southern California.

Amoena is another variety that seems to

Continued on Page 124

LILY SEED - LIMONIUM - LINUM

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

LIGULARIA. (lig-u-LAY-re-ah) Compositae.

Herbaceous perennials with broad basal leaves attractively marked and with many yellow ray-flower heads in racemes or corymbs on 5 ft. stems. They are of easy culture and useful in the border.

—*clivorum*, Orange Queen. Heads 4" ac and pretty orange; 5 ft; HP... LIGU-1Q. 20¢

LILIUM LIL-ee-um) LILY. Liliaceae.

Most lilies are easily grown from seed and hardy in the North. They should be planted in a well prepared bed where no manure has been recently added. The ideal bed would be the one prepared a year before and covered with a mulch. Sand should be mixed with the soil for best results. Lilies can be quickly grown from bulbs, delivered in the fall or from seed which are not hard to grow. For growing from seed the species are divided into two groups according to the method used in germinating them. Those marked (A) plant the seed outdoors in late fall when they germinate the following spring with no top growth the first year; transplant to the nursery row the 2nd or 3rd year. Those marked (B) sow in March or April outdoors or a month earlier indoors; they take about 3-6 weeks to germinate; carry the seedlings over the first year and transplant to the nursery rows the 2nd spring. There are other short cut methods which will be described in these columns from time to time.

- amabile*. Red, dark spots; Turk's Cap; 3 ft; A..... LILY-2. 50¢
- luteum*.....Yellow form; A..... LILY-2L. 50¢
- auratum*. (Type) Gold Banded L.; bowl-shape; 4-6 ft; B..... LILY-4. 25¢
- Late Form*. B..... LILY-4L. 50¢
- pictum*. White, heavily spotted crimson; 6 ft; B..... LILY-4P. 50¢
- platyphyllum*. More massive and robust; 6 ft; B..... LILY-4Y. 50¢
- praecox*. B..... LILY-4R. 50¢
- tricolor*. Like A. *platyphyllum* but with out crimson spots; B..... LILY-4T. 50¢
- Aurelian Hybrids*. A..... LILY-47A. 50¢
- Backhouse Hybrids*. B..... LILY-47B. 50¢
- Bellingham Hybrids*. B..... LILY-47H. 25¢
- Bclanderi*. Thimble Lily. Bell-shaped; wine red; 3 ft; B..... LILY-8. 50¢
- callosum*. Bright scarlet dotted purple; Japan; 2 ft; A..... LILY-11. 50¢
- canadense flavum*. Lemon yellow; 5 ft; B..... LILY-13F. 25¢
- candidum*. Madonna Lily. Waxy white; 4 ft; A..... LILY-13. 25¢
- Catesbaei*. Southern Red Lily. Scarlet, yellow spotted 2 ft; N. C.; B..... LILY-18. 50¢
- centifolium*; see *leucanthum v. chloraster*.
- cernuum*. Lilac spotted purple; nodding; 2 ft; A..... LILY-20. 35¢
- columbianum*. Bright reddish orange reflexed; 4 ft; B..... LILY-23. 25¢
- Ingrami*. Has larger and brighter flowers; B..... LILY-23G. 25¢
- cordatum*. White striped purple; erect; 4 ft; B..... LILY-25. 50¢
- Crow's Hybrids*. (Friemann Strain) Trumpet; huge cream; 5-6 ft; A..... LILY-47W. 25¢
- Pink Selections* A..... LILY-47WP. 50¢
- dauricum Wilsonii*. Deep apricot; erect; 3ft; A..... LILY-32W. 50¢
- Davidii*. Refined Tiger Lily; 6 ft; A..... LILY-33. 50¢
- Wilmottiae* A..... LILY-33W. 50¢
- formosanum*. Late, trumpet; white; 8 ft; A..... LILY-39. 25¢
- giganteum v. himalaicum*. White; huge woodland lily; 6-12 ft; B..... LILY-40H. 50¢
- Henryi*. Golden Speciosum; recurved, soft golden orange; 6-8 ft; A..... LILY-45. 25¢
- hollandicum*. Up facing bowl-shape; many forms; 2-3 ft; A..... LILY-46. 30¢
- Humboldtii v. magnificum*; see H. v. *ocellatum*; B.....
- Humboldtii v. ocellatum*. Reddish bronze fls; drooping; 6 ft; B..... LILY-48C. 50¢
- imperiale v. G. C. Creelman Hybrids*. Regale x *Sargentiae*; 6-8 ft; A..... LILY-49C. 35¢
- japonicum*. Pink trumpet-shaped; 2-4 ft; B..... LILY-50. 50¢
- Kelloggii*. Pink spotted with purplish-black; erect; 4 ft; Calif; B..... LILY-51. 50¢
- Leichtlinii v. Maximowiczii* Wadal. Early Tiger L. Recurved; 6 ft; A..... LILY-58MW. 50¢
- leucanthum v. chloraster*. Chinese White L; trumpet; 6 ft; A..... LILY-54. 50¢
- myriophyllum v. superbum*. Sulphur-yellow reddish outside; 6 ft; A..... LILY-67. 50¢
- Longiflorum Hybrid*. White Trumpet L. 3 ft; Japan; A..... LILY-55C. 50¢
- White Queen*. A..... LILY-55Q. 50¢
- Marhan hybrids*. Martagon album x *Hansonii*; yellow; 4 ft; B..... LILY-47B. 50¢
- maritimum*. Coast Lily. Reddish orange spotted purple; 4 ft; B..... LILY-58. 50¢
- Martagon*. Turk's Cap L. Rose or dark purple; 6 ft; B..... LILY-59. 50¢
- album*. White variety; B..... LILY-59A. 50¢
- Maximowiczii*; see *Leichtlinii v. Maximowiczii*.
- medeoloides*. Wheel Lily. Apricot to scarlet; recurved; 3 ft A..... LILY-62. 50¢
- nepalense*. Yellow stained purple inside; 3 ft; A..... LILY-70. 50¢
- pardalinum*. Leopard Lily. Orange-red spotted purple; 8 ft; B..... LILY-77. 25¢
- giganteum*. White tinged green; 12 ft B..... LILY-77G. 50¢
- princeps*; see *imperiale*.
- pumilum*. (tenuifolium) Coral L Bright scarlet ; 2 ft; A..... LILY-91. 25¢
- regale*. Royal L. White; 5 ft; China; A..... LILY-96. 25¢
- album*. A..... LILY-96A. 50¢
- Palmer's Hybrids*. Named varieties mixed; A..... LILY-47M. 50¢
- Preston Hybrids*. Named varieties; recurved; 3-5 ft; A..... LILY-47P. 50¢
- regale*. Huge white trumpets; 4-6 ft; A..... LILY-95. 25¢
- rubellum*. Small rose-pink; funnel-shape; 1-2 ft; B..... LILY-99. 50¢
- Sargentiae*. Rose-purple outside, white within; 6 ft; A..... LILY-105. 50¢
- Hybrid*. S. x *centifolium* hybrids; A..... LILY-105C. 50¢
- Scotiiae hybrids*. Willmottiae x *elegans v. Mahogany*; 3 ft; A..... LILY-106H. 50¢
- Skyrocket*. A..... LILY-47S. 50¢
- speciosum v. Kraetzeri*. B..... LILY-110K. 50¢
- magnificum hybrids*. B..... LILY-110M. 50¢
- punctatum*. B..... LILY-110P. 50¢
- rubrum*. B..... LILY-110R. 50¢
- superbum*; see *myriophyllum v. superbum*. B.....
- Sulphur hybrids*. A..... LILY-47S. 50¢
- sulphureum*; see *myriophyllum v. superbum*.
- tenuifolium*; see *pumilum*.
- Tsingtanense*. A..... LILY-120. 75¢
- umbellatum*; see *hollandicum*.
- Washingtonianum v. purpureum*. White changing to lilac; 6 ft; B..... LILY-126P. 50¢
- Willmottiae*; see *Davidii*.
- Lily Blend*. All (A) kinds mixed..... LILY-XA. 35¢
- Lily Blend*. All (B) kinds mixed..... LILY-XB. 35¢
- Lily Blend*. All kinds; best for those growing in vermiculite..... LILY-X. 35¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

THE HERB LIST

Continued from Page 119
grown from seed sown early in spring or late fall; transplant in early summer to 12-18 inches apart; limy soil best.

Pkt. 15¢ Oz. 50¢

LAVENDER, absinthium.

Shrubby plant and grown as a source for absinthe; hardy and easily grown.

Pkt. 15¢; Oz. 50¢

LAVENDER, True.

(*Lavendula spica*) Not real hardy in N. and must be protected with a good mulch of straw; they develop their best



LAVENDER

fragrance if grown in a dry, light, limey friable soil in full sun, the soil not too rich. Grown for an ornament as well as for its leaves which are dried, giving off its rich fragrance for which it is valued. Start early in spring indoors or try planting it outdoors in Nov. Pkt. 25¢; 3 for 55¢

LEEK

(*Allium porrum*) A hardy biennial with a mild onion flavor, grown for its thick leaves and stems and used as asparagus or for seasoning soups and meats dishes. Sow early in spring in a seed bed, transplanting when 3" tall, 1-2 in. apart in flats; plant in light rich moist but well drained soil in rows with the plants 12-15" apart, setting them half their height in soil and gradually draw earth around stems as they grow. The plants can be dug for winter use, placing them in a cold frame or cool cellar, having a low temperature.

Pkt. 15¢; Oz. 40¢; 1/4 lb. \$1.60.



MARJORAM

LOVAGE

(*Levisticum officinale*) A perennial herb growing to 6 ft. with glossy dark green

Continued on Page 123

September Garden Record

These two columns have been reserved for your own garden record for the month. Make notes on what should be done next year at this time; new plants added this month and many other reminders that will be of value in your gardening operations. The SAIER'S GARDEN MAGAZINE is designed to be useful next year as well as this and copies will be valuable for future references. Indexes will be provided in later issues so that a quick reference can be made to items of interest, especially descriptions and culture.

THE HERB LIST

Continued from Page 122
leaves and greenish-yellow flowers in umbels, hardy as far N as Pa. and Ill., best in deep rich soil, easy to grow. Cultivated for its aromatic fruits. **Pkt. 15¢**

RHUBARB

(*Rheum raphaniticum*) White Rhubarb is commonly increased by division of the root, growing it from seed is a much easier method, cheaper and above all plants from seed are much stronger and better growers. It comes very true to type as well. Sow seed early in the spring, growing them in a rich soil, transplanting them as they get size and finally set out in rows 4-5 ft. apart both ways. They stand a good amount of manure.

—**Golath.** A red stem variety that is used very much. **Pkt. 15¢; Oz. 25¢; 1/4 lb. 80¢**

—**Queen Victoria.** A popular English var **Pkt. 15¢; Oz. 25¢; 1/4 lb. 80¢**

ROCKET-SALAD

(*Eruca sativa*) **Roquette.** It is used as greens. **Pkt. 15¢; Oz. 45¢**

ROSEMARY

(*Rosmarinus officinalis*) A hardy shrubby plant grown chiefly for its aromatic leaves used in seasoning as well as an oil used in medicines. Grows 6 ft. and lasts for years with a little winter protection; prefers dry, well drained soils

Pkt. 25¢; Oz. \$1.60.



SWEET BASIL

RUE

(*Ruta graveolens*) A perennial shrubby plant to 3 ft. with yellowish flowers; has medicinal properties as well as ornamental. **Pkt. 25¢**

SWEET BASIL

(*Ocimum basilicum*) Easily grown tender annual, 1 ft. Leaves delightfully clove-scented and used either green or dried in seasonings soups, salads, cottage cheese, chopped meats or sausages. Plant 6-10" apart, thrives in light, warm soils. Cut in undles to dry. Plants can be potted for winter growing. **Pkt. 15¢; Oz. 45¢.**

SAGE

(*Salvia officinalis*) Hardy perennial, easily grown; plant early in spring or in Nov. The leaves are dried and used as seasoning in meats, sausages, stuffings and cheeses. Space 2 1/2-3 ft. **Pkt. 15¢; Oz. 30¢.**

SAVORY, Winter

(*Satureja montana*) A perennial herb or sub-shrub that is grown and used much like the Summer Savory. **Pkt. 15¢; Oz. 65¢**

SAVORY, Summer

(*Satureja hortensis*) Hardy annual and very useful culinary herb, the aromatic leaves being used, either green or dried, soups and stews. Start seed in pans on account of their small size, transplanting

Continued on Page 126

COCHLOSPERMUM

Continued from Page 113

Cochlospermum are strictly tropical in origin and have no close relatives in the temperate zone. They are a monotypic genus of the natural order Cochlospermaceae, lying between Bixaceae and Flacourtiaceae, in both of which they have included by various botanists in times past. There are apparently 12 species of Cochlospermum, 5 in Latin America, 4 in Australasia, 1 in India and 2 in Africa. All are characterized by bright yellow flowers except the Queensland *C. heteronemum* whose bright yellow blossoms are so streaked with purple they are sometimes called "Tiger Flower". Brazil's *C. orinocense*, blooming in October, is "remarkable for its ornamental qualities... and its beautiful golden florescence." Peru's *C. williamsii* is reported "a magnificent tree." *C. balicum* from the East Indies, has "large, handsome bright yellow flowers" but "the leaves are subject to insect attacks and have a delapidated appearance." Hawaii's *C. hibiscoides* is probably identical with *C. vitifolium*, although the two were separated by Rock. Hawaiians refer to the plants indiscriminately as "Buttercup Tree." The Australian species *C. gillivraei* and *C. gregori* have recently been introduced into Florida but are still in the experimental stage.

A Request of Floridians

NOTE: We wish Floridians having or knowing of good flowering specimens of Cochlospermum would write us so a list of them could be printed and visitors in Florida could then be able to see these beautiful shrubs or trees.

BILLBERGIA -- The Friendship Plant

Continued from Page 121

be almost ever blooming. It is rather dwarf and the leaves take on an interesting maroon coloring. The flowers are orange-scarlet.

Saundersii is highly desirable because of its very striking foliage, unlike that of any other plant. Its purplish bronze leaves are heavily spotted with cream. Its flowers are blue carried on red bracts.

Whereas *Billbergia nutans* is seen growing everywhere in Southern California, *Billbergia pyramidalis* is a favorite in Florida. It is one of the showiest of the species, having a large erect bract that is of a glowing red and flowers that are tipped with violet.

Billbergia Leitzii is a favorite with the author, for its interesting mottled leaves make it decorative all the year round and its bright red flowers, which bloom regularly every Christmas and stay in color for the entire holiday season, make it especially attractive.

These are but a few of the *Billbergias* which have won favor with those who know them. There are many, many more, all delightful because of their striking foliage and showy flowers.

Wants Olive Tree Seed

G. B. Younger, Rt. 2, Fort Myers, Fla., wants to contact some one in California for Olive tree seed.

DRIP FROM TREES

The drip from trees is fatal to many *Sempervivums*. They require full sun and a gritty soil.

All *Gunneras* should be transplanted in the spring.

All *Aubrietias* should be moved in the autumn, never in the spring.

GET EVERY ISSUE — \$2.00 PER YEAR

LIMONIUM - LINUM - LUPINUS

LIMONIUM. (li-MOH-ne-um) STATICE, SEA-LAVENDER. - Plumbaginaceae.

A highly prized flower both for the border and for commercial growing, many of those listed were formerly listed as *Statice*. They make fine everlasting or dried flowers; all easily grown from seed, the annual sorts sown early in the spring and the perennials anytime up to August for the next year's flowers.

- bellidifolium*. (S. caspia) White and pale blue; 8"; HP..... LIMO-2. 15¢
- Bonduellii*. Golden yellow fls; 2 ft; HA or HB..... LIMO-4. 15¢
- Hybrids*. New strain; interesting forms..... LIMO-14N. 15¢
- latifolium*. Immense lavender-purple heads; dry places; 2 ft; HP..... LIMO-16. 15¢

L. SINUATUM. Biennial or perennial, grown as a hardy annual. The leaves form low rosette at base of the stiff angular branching flower stalk. Used very much for cutflowers, drying, or in the border.

- Kampf's Tall*. Improved blue market strain..... LIMO-32K. 10¢
- Marktkonigen*. A new German strain in a perfect blue..... LIMO-32M. 15¢
- True Blue*. A California strain in a rich blue..... LIMO-32C. 15¢
- Sinuatum Sorts Mixed*..... LIMO-32X. 10¢

Price on all *L. sinuatum* Sorts: Oz. 40¢; ¼ lb. 85¢; lb. \$2.50, Prepaid

- Suworowii*. Bright rose spikes; easy house plant too; 18"; HA..... LIMO-36. 15¢
- Limonium Blend*. Mixture of all kinds..... LIMO-X. 10¢

LINARIA (lye-NAY-ree-ah) TOADFLAX. Scrophulariaceae.

Annual and perennials of easy culture; the flowers are in racemes or spikes in many colors. They are sometimes called Baby Snapdragons. Excellent in beds or for cutting. Sow seeds from August to February; best in full sun.

- alpina*. Violet fls; Alps; 6" tufted; HP..... LINA-1(C). 30¢

LINNAEA. (li-NEE-ah) TWIN-FLOWER. Caprifoliaceae.

Subshrubs suitable for the rockery thriving in a moist peaty or woody soil.

- borealis*. Dainty trailer; bell-shaped rose fls; glossy ev; HP..... LINN-1. 30¢

LINUM. (LY-num) FLAX. Linaceae.

Annual and perennial plants and shrubs with blue, white or yellow flowers, popular in the border. Grow in full sun and sow the annual forms direct to the garden early in the spring; the perennials up to August for next year's flowers. Easy to grow.

- alpinum*. Deep blue ¾ inches across; 10" high; HP..... LINM-2(C). 30¢
- flavum*. Golden yellow fls; 1 ft; half hardy in North; HP..... LINM-14. 15¢
- compacium*. Compact form especially suitable for RG; HHP..... LINM-14C. 20¢
- grandiflorum*. Red to bluish purple fls, 1½" ac; 2 ft; HA..... LINM-16. 15¢
- coeruleum*. Very showy bluish purple; HA..... LINM-16C. 15¢
- roseum*. Large rose-pink fls; HA..... LINM-16R. 15¢
- Blue*. Very popular cutflower; HA..... LINM-16B. 15¢
- Lewisii*. More robust than *L. perenne*; 18"; Mont; HP..... LINM-19. 15¢
- narbonne*. Best form of this pretty Flax; gentian-blue fls..... LINM-23(W). 30¢
- perenne*. Deep blue fls; 18" tall; very good; HP..... LINM-26. 15¢
- album*. White form of above..... LINM-26A(C). 30¢
- White*. A white flowered form of above; HP..... LINM-26W. 15¢
- Linum Blend*. All the above kinds mixed..... LINM-X. 10¢

LITTONIA. (lit-TOH-nee-ah) Liliaceae.

Climbing or erect plants with bell-shaped orange or yellow flowers and tuberous roots; easy to grow in a sunny window; give rest in early winter. Related to *Gloriosa*.

- modesta*. Bright orange bells, 1" ac; good summer house plant..... LITT-1. 25¢

LUEHEA.

- seemani*. Costa Rica tree with pretty white fls; Fla or S. Cal; TTr..... LUEH-1(M). 30¢

LUNARIA. (leu-NAY-ah) SATIN-FLOWER, HONESTY, MOONWORT. Cruciferae.

They come in an annual and a perennial species; are grown mainly for the pretty dried flowers. Sow seed early for the annuals and any time up to August 20th for the perennials. The annuals are often biennial.

- annua*. 18" tall and comes in white, red and purple fls; HA or HB..... LUNA-1X. 10¢
- White*. Pure white fls..... LUNA-1W. 15¢
- Crimson*. A dark crimson colored flower..... LUNA-1C. 15¢
- Munstead Purple*. A fine strain for dried flowers..... LUNA-1M. 15¢
- Variegated*. The leaves are variegated in this strain..... LUNA-1V. 20¢

LUPINUS. (lu-PI-nus) LUPINE. Leguminosae.

Flowers in great profusion on long stemmed spikes; both annual and perennial sorts are excellent for display in the border or for cutting. They grow on any well drained soil and thrive even on poor land; sow seed where plants are to grow.

- arboreus*. Lavender fls; shrub to 8 ft; TP..... LUP-7. 15¢
- Hartwegii*. Blooms July-Sept; best annual species; HA..... LUP-25. 15¢
- Blue*. In a light shade..... LUP-25B. 15¢
- White*. Pure white..... LUP-25W. 15¢
- Celestial Blue*. Sky blue..... LUP-25C. 15¢
- Rose*. A deep rose color..... LUP-25Z. 15¢
- Lyallii*. For the RG; easily grown; to 4 ft; HP..... LUP-34. 20¢
- nanus*. Blue with purple-dotted spots; fragrant; May-June; 15"; HA..... LUP-40. 15¢

L. POLYPHYLLUS: The tall perennial Lupin, hardy in the North, with winged flowers flowers in many beautiful colors, blooming most of the summer. They are easily grown and their brilliant spikes will make an showy display in any border; to 5 ft; June-Sept.

- Carmine*..... LUP-50C. 15¢
- Blue*. A pale blue or sky blue..... LUP-50B. 15¢
- Yellow*. A nice bright color..... LUP-50Y. 15¢
- Moerrheimi*. Pretty rose and white flowers..... LUP-50M. 15¢
- Princess Juliana*. Dwarf bright pink, 3 ft tall..... LUP-50J. 15¢
- Salmon Queen*. Beautiful shade of salmon-rose..... LUP-50S. 15¢
- Terre Cotta*. In various shades of terre cotta..... LUP-50T. 15¢
- Russel Hybrids*. This is a very superior strain in bright colors..... LUP-50R. 20¢
- L. polyphyllus Blend*. Hand made blend..... Oz. 35¢; Lb. \$3.80;..... LUP-50X. 15¢
- subcarnosus*. Texas Blue-bonnet. Bushes 15" tall; massive fl spikes; HA..... LUP-56. 15¢

PLEASE NOTE: The symbols used for ordering each kind of seed will make it not only easier for you to order, but also more definite as to the exact strain or variety, especially in many kinds where the listing is complex; in ordering make our symbols very plain, for instance here in *Linum*, the symbol is LINM and there is also a LINN symbol used for *Linnaea*; it is easy to make the M and N to look alike.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

LYCHNIS - MAHONIA - MARIGOLD

LYCHNIS. (LIK-nis) Caryophyllaceae.

Brilliantly colored flowers and easily grown from seed; if sown indoors early, will flower following June and July. Requires plenty of sunshine and a rather dry soil. They are related to the Silenes and the dominant color is red; herbaceous HA and HP.

- alpina. Pink fls; dense terminal heads; tufted; 1 ft; HP..... LYCH-2. 30¢
- Arkwrightii Hybrids. Showy; nice color range; 18"; HP..... LYCH-4. 20¢
- chalcedonica. Scarlet fls in dense term. heads; June-July; 2-3 ft; HP..... LYCH-7. 20¢
- Coeli-rosa. Rose-of-Heaven. Rose red term. fls; 18"; HA..... LYCH-8. 15¢
- Coronaria. Rose Champion. Crimson; terminal fls; 3 ft; HB or HP..... LYCH-10. 15¢
- astrosanguinea. Dark blood-red fls of above..... LYCH-10A. 15¢
- Red. Deep red color..... LYCH-10R. 15¢
- Flos-cuculi. Cockoo-fl. Red or pink panicle fls; May-Aug; 15"; HP..... LYCH-13. 25¢
- Flos-Jovis. Fl. of Jove. Pink in dense umbels; June-July; 18" HP..... LYCH-14. 20¢
- Forrestii Hybrids. Shades of pink to crimson and white; 20"; HP..... LYCH-16. 15¢
- Haageana. Hybrid, orange-red, scarlet fls; May-June; 20"; HP..... LYCH-19. 15¢
- utriculata. Tender perennial..... LYCH-29. 25¢
- Viscaria. Red and purple, ½ in. ac, clusters; May-June; 18"; HP..... LYCH-30. 15¢
- Lychnis Blend. Mixture of all kinds..... LYCH-X. 15¢

LYSIMACHIA. (ly-si-MAY-ki-ak) LOOSESTRIFE. Primulaceae.

Annual and perennial summer blooming flowers in white or yellow, sometimes purple and blue, in spikes or racemes. They are grown in moist places.

- punctata. Yellow fls in whorls; 3 ft; HP..... LYSM-14. 20¢
- ramosa..... LYSM-15. 20¢
- Lysimachia Blend. Mixture of those in stock..... LYSM-X. 15¢

MACHAERANTHERA. Compositae.

A genus of American daisy-like annuals, biennials and perennials, similar to hardy Asters. Tahoka Daisy is the commonly grown species.

- tanacetifolia. Blue fls; June-Nov; sow late fall, ey spring; HA..... MACA-1. 20¢

MACLEAYA. (mah-KLAY-rah) PLUME POPPY, BOCCONIA. Papaveraceae.

Perennials used for their bold and attractive habit and appearance. The flowers are small and in terminal panicles.

- cordata. Lvs 8" ac; specimen plants; 6 ft; HP..... MACL-1. 15¢
- microcarpa. Differs from M. cordata in flowers; 6 ft; HP..... MACL-3. 20¢

MAHONIA. (ma-HOH-ne-ah) Berberidaceae.

Perennial evergreen shrubs, similar to Barberry. The flowers are yellow and in racemes followed by blue berries. Some are hardy in the North and should be planted in a sheltered place from the wind and hot sun.

- repens. Low growing; bluish green lvs; hardy in N; 1 ft; HP..... MAHO-16. 20¢

MALCOMIA. (mal-KOH-me-ah) MALCOME STOCKS. Cruciferae.

Annuals and perennials from Med. regions, mostly grayish leaves. Plant seeds early indoors or direct to garden. In M. maritima sow seeds every 2 weeks for a succession bloom.

- maritima. Va. Stocks. Mixed colors; fine for border; 12"; HA..... MALC-3X. 15¢
- Yellow. Rich clear yellow..... MALC-3Y. 15¢
- Rose. Deep rose color..... MALC-3Z. 15¢
- Crimson Gem. The best red..... MALC-3C. 15¢
- White. Pure white..... MALC-3W. 15¢

MALVASTRUM. (mal-VAS-trum) FALSE-MALLOW. Malvaceae.

Mallow-like plants and subshrubs with purple, yellow or red flowers, usually in terminal spikes. Makes nice plants in the border and sometimes grown in the greenhouse.

- coccineum. Prairie-M. Brick-red fls, 1" ac; 8 ft; hardy, HP..... MALV-3. 20¢

MARYGOLDS. (Tagetes) Compositae.

For Marigold List see in following Issues, please, or write for old list.

MATRICARIA. (mat-re-KAY-re-ah) MATRICARY. Compositae.

Mostly annuals and a few perennials, with finely cut foliage and small flower heads. They are easily grown. There is little difference between them and Chrysanthemums. Chamomilla is also included here; treat them as you would Chrysanthemums.

- indora v. Bridal Rose. Very double heads white ray fls; 2 ft; HA..... MATI-3B. 15¢
- Snowball. Small double heads of white ray-fls; 2 ft; HA..... MATI-3S. 15¢

MATHIOLA. (mat-THY-oh-lah) STOCKS. Cruciferae.

Annuals and perennials, some subshrubs native mostly of the Med. regions and commonly known as Stocks. The flowers are in lilac, purple and white in terminal racemes. M. bicornis is the Evening Stock or Perfume Plant, very fragrant in the evening but the flower is closed during the day. M. incana, the common Stocks or Brampton Stock or Gilliflower and a type of this is the Ten-Weeks-Stock.

M. INCANA: This biennial or perennial with one annual type, sturdy, erect plants in many colors. Stocks are not only grown outdoors but make good greenhouse plants and for this purpose the seed should be planted in late autumn or early winter. For outdoor planting, seed can be started indoors in February. Seed sown in summer will make good house plants for winter. They are usually handled as half hardy subjects and in the far North would not winter over.

—**DOUBLE GIANT COLUMN STOCKS:** Immense fully double close spaced flowers, one on 2-2½ ft. spike per plant. This is strictly a non-branching strain especially used by florists. Those listed are all popular colors and the best yet developed.

- Ball's No. 2. One large white spike, tinged with pink..... MACH-2BW. 25¢
- Ball 14.Rose-pink. Deep rose-pink, the best..... MACH-2Z. 35¢
- Gardenia. Very large single pure white variety..... MACH-2G. 25¢
- Purity. Non-branching pure white..... MACH-2W. 25¢
- Schrieber's All Double. 100% double German strain..... MACH-2SX. 25¢
- Pastel Shades. Improved Bismarck..... MACH-2PX. 20¢
- Giant Column Blend. A hand made blend of colors..... MACH-2X. 30¢

Above kinds, per Oz. \$8.00; per 1/4 lb. \$20.00.

Mathiola or Stocks: Continued on Page 126.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

QUACK GRASS

In the small garden, the only way to get it to grow with increased vigor, is to use a spade on it; in this way you make a nice batch of cuttings which will put up stems whose strength will be superior to anything you have ever grown. Like most plants they can be cut and dumped around a good deal in the spring without killing them; however along about June, you can do more harm moving a plant; in August most plants that do not resent moving can be moved with a little care but as September comes around they begin to dig in for the winter. Therefore, outside of actually digging the entire plant up, roots and all, you will not eradicate it from your soil. Most plants die out thru winter exposure, at least, it is the damage done them during the winter that finally kills, whether in the spring or in the summer, so it would stand to reason that turning the sod upside down as late in the fall as possible and leaving it lay till spring, when it can be raked with a hooked fork or dragged with a spring tooth harrow, to draw the roots up on top of the soil where they will be easily killed by the sun or raked up and put in piles or in the road, if a small quantity. It must be continually worked after this and as far as roots are concerned, one ought to get rid of them by August; but there are the seeds that may be in the soil, to contend with. In a small patch in the garden, forking them out with a garden fork is the only practical method, and get EVERY root.

Limosus: (lim-MOH-sus), of marshy places.
Malacoides: (mal-ak-KOY-deez), mucilaginous.

Heterophyllus: (het-er-oh-FILL-us), various leaved.

Cirrhosus: (sihr-ROH-sus), with tendrils.

Inodorus: (in-oh-DOH-rus), without fragrance.

Iridescent: (ir-id-DESS-senz), shimmering or changing color.

Iridioides: (eye-rid-ee-OY-deez), Iris-like leaved.

SPHAGNUM FOR GERMINATING



It is simply impossible to germinate many seeds without the use of milled sphagnum moss. If you were over your seed pans all day long as the professional grower is you may find you could get along without it, but no professional grower would fail to have the fine moss on hand. It will save many a packet of valuable seed from loss due to an hours neglect, that cannot be avoided by one having other duties.

BUSHEL BAGS: \$2.25, postpaid. This will last the average grower a year.

PIONEER SEED COMPANY
Dimondale, Michigan.

THE HERB LIST

Continued from Page 123

as soon as large enough, spacing 15 inches apart; thrive in a good garden soil and full sun. It is very famous for its flavor in green string beans and should be grown in all bean sections. Pkt. 15¢; Oz. 45¢.

SCORZONERA (skaur-zoh-NEE-rah) Annual herb grown as an annual for its long slender roots known as Black or Spanish Salsify. The young leaves can also be used in salads. Grow it the same as for Parsnips or Salsify.

Pkt. 15¢; Oz. 35¢; 1/4 lb. \$1.25.

SCURVEY GRASS

(Cochlearia officinalis) A small herb of Mustard Family grown for its medicinal properties also as a salad; prefers cool and partially shaded soil. Pkt. 15¢

SOAREL, Mammoth Lyon

(Rumex. Low growing perennial with sour leaves used in salads or to flavor salads. This is an improved variety much used in France and well worth growing where a market is available.

Pkt. 15¢; Oz. 45¢.



SWEET MARJORAM

(Origanum marjorana) Perennial best grown as an annual in the N; leaves used green in summer and dried for winter, excellent for salads when green and for seasoning soups, meats, poultry and cheese when dried. Seeds are small and best started in seed pan and transplanted out, 12-15" apart. For drying geather leaves just before they flower.

Pkt. 20¢; Oz. 35¢.

TANSY, French

(Tanacetum vulgare) Common Tansy, perennial to 3 ft. grown in the garden for ornament, in herb gardens for its medicinal properties and flavoring, easily grown.

Pkt. 15¢; Oz. 80¢.

THYME

(Thymus vulgaris) A hardy perennial growing to 8" tall with lavender flowers, grown both for ornament in border or rock garden and for its flavor, the fresh tops being used in garnishing and the leaves, either dried or fresh, chopped and used in a wide variety of cooked foods. Easily grown in ordinary garden soil, spacing 10-12 inches apart. Pkt. 15¢; Oz. 45¢.

WORMWOOD

(Artemisia vulgaris) Mugwort or Mother Wort. Tall plant with stems often purple and leaves fragrant, green above and white beneath, flower heads yellow in spikes. Plants are aromatic, the tops and leaves being the parts dried; perennial. Pkt. 20¢

MATHIOLA - GARDEN STOCKS

MATHIOLA or STOCKS: Continued from Page 125.

EARLY GIANT IMPERIAL: Of branching habit, the large flowers and long stems of this class makes it especially desirable for cutting. Very early blooming and produces a high percentage of doubles; 26 inches.

- Blood Red. Color 27 shading to 24..... MACH-3B. 20¢
- Chamois. Ivory, color 606/3 tinged old rose 3/3..... MACH-3C. 20¢
- Fiery Red. A Super Giant Imperial strain..... MACH-3R. 20¢
- Rose. Deep rose-pink, 630 and 630/1 white centers..... MACH-3Z. 20¢
- Rose Charm. A Super Giant Imperial strain..... MACH-3RC. 20¢
- Roselight. Beautiful rose colored variety..... MACH-3RL. 20¢
- White. Early strain..... MACH-3W. 15¢
- Giant Imperial Blend. A carefully hand made blend of colors..... MACH-3X. 20¢

All Giant Imperial varieties: Oz. \$2.50; 1/4 lb. \$7.75.

TEN-WEEKS-STOCKS: Dwarf, compact, branching and fine for bedding; sweet scented; 12 inches tall. Usually grown as an annual and very popular for outdoors on account of its earliness. Listed as Dresden Stocks and Cut-and-Come-Again. Start seeds early in the spring, either indoors or outside where they are to grow.

- Dark Blue. Large flowered double dark blue..... MACH-4D. 15¢
- Dwarf German Mixed. Choice double dwarf German Stocks..... MACH-4XG. 20¢
- Finest Mixed. All colors and shades in best blend..... MACH-4X. 15¢

ALL TEN-WEEK-STOCKS: Ounce, \$1.75; 1/4 lb. \$15.00.

GIANTS of CALIFORNIA: Superb branching type producing immense spikes of 2 inch florets and averaging better than 70% double, one mammoth spike per plant can be produced when planted 4-5 inches apart in beds. Best strain for commercial growers.

—Exquisite Mixed..... MACH-6X. 25¢

GIANT BEAUTY OF NICE or MAMMOTH: These come into flowering as early as the Ten-Weeks Stocks and form a pyramidal-shaped plant; most popular for general garden growing; 1 1/2 feet high.

- Snow White. Pure white variety..... MACH-5W. 15¢
- Copper Scarlet..... MACH-5C. 15¢
- Salmon. One of the popular colors..... MACH-5S. 15¢
- Silver Lilac. Mammoth Excelsior. Large lavender fls..... MACH-5L. 15¢
- Silver Pink..... MACH-5SP. 20¢
- Beauty of Nice Blend. All colors blended..... MACH-5X. 15¢
- Brilliant Rose..... MACH-5Z. 15¢
- New Mammoth Hybrids..... MACH-5H. 15¢
- Early Branching Mixed. Early strain in mixed colors..... MACH-5EX. 15¢

PERPETUAL BRANCHING or GIANT PERFECTION: An early double flowering strain, a favorite with the florist; high double percentage and strictly hand blended; 2 ft.

- Perpetual Blend..... MACH-6X. 20¢
- Dresden Perpetual Blend. Giant Perfection type; extra..... MACH-6DX. 15¢

LARGE FLOWERED DOUBLES:

- Light Blue..... MACH-7B. 15¢
- Snow White..... MACH-7W. 15¢
- Dwarf Strain Mixed. Extra nice..... MACH-7DX. 15¢
- Double Choice Mixed..... MACH-7X. 15¢
- Brilliant Rose. Large flowered..... MACH-7Z. 15¢
- Crimson. Double large flowered..... MACH-7C. 20¢

- bicornis. Lilac fls; July-Sept; sow early; 15"; HA..... MACH-2. 20¢
- crassifolia..... MACH-12. 25¢

MAURANDIA. (mau-RAN-de-ah) Scrophulariaceae.

Bright flowered plants, mostly vines, for the greenhouse or far South. If the seed is sown early they make excellent plants for baskets and vases in the open during the summer. For winter grow in the greenhouse at 60 degrees F in fibrous loam with leaf mold and cow manure.

- scandens. Purple fls 1" long; TP..... MAUR-8. 25¢

MECONOPSIS. (me-kon-OP-sis) Papaveraceae.

Annuals, biennials and perennials requiring a cool moist summer, a sheltered partly shaded place. They make attractive plants in the border. Start the annuals early indoors, setting out after frost danger is passed; the perennials are best started in a frame over the first summer. Flowers are in racemes or panicles; some are hardy, others semi-hardy in the North; the Northwest Coast states have ideal climate for them. Do not disturb after establishing them.

- betonicifolia. Purple fls in clusters 2" ac; 6 ft; HP..... MECO-2. 25¢
- Bailey. Not much different to the above..... MECO-2B. 25¢
- cambrica. Welch Poppy. Pale yellow fls 3" ac solitary; 1 1/2 ft; HP..... MECO-3. 25¢
- aurantiaca. Orange flowered type of above..... MECO-3A. 25¢
- cathcartii. Golden yellow fls, 2-3" ac; HP..... MECO-5. 25¢
- horridula. Light blue or claret solitary fls; 5 ft; HB..... MECO-9. 25¢
- integrifolia. Yellow Chinese Poppy. Yellow fls 6" ac; 3 ft; HB..... MECO-10. 25¢
- napaulensis. Satin Poppy. Pale blue satiny fls 2" ac; 6 ft; HP..... MECO-13. 25¢
- paniculata. Yellow fls 2" ac, racemes 2 ft. long; 5 ft; HP..... MECO-14. 25¢
- quintuplinervia. Lavender to purplish fls 3 1/2" ac; RG; 1 ft; HP..... MECO-16. 40¢
- simplicifolia. Nodding blue or purple solitary fls 3" ac; 2 ft; HP..... MECO-18. 40¢
- Meconopsis Mixture. All species mixed..... MECO-X. 25¢

MICHELIA (my-KEE-le-ah) Magnoliaceae.

Trees and shrubs from Asia much like Magnolias and grown only in the South.

- catincarii..... MICH-1. 25¢
- excelsa..... MICH-4. 25¢
- lanuginosa..... MICH-8. 25¢

AN EXPLANATION: The numbers used in listing our seeds is simple and helpful to the buyer, once they are understood. Each species is given a number according to its alphabetical position; all varieties or forms of this species, always has the same number but each form has a letter with the number; the letter X always stands for a mixture and if after a number it is always a mixture of the forms of that species only but if the X follows the genus symbol and without any numbers, it is a mixture of the entire genus. In the listing of the names the dash (—) always means it belongs to genus above and two dashes, (— —) means it belongs to the species just above.

PIONEER SEED COMPANY

Dimondale, Michigan.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

MIGNONETTE - MYOSOTIS

MIGNONETTE. (Reseda) Resedaceae.

Mignonette belongs to the genus *RESEDA* of which there are 3 or 4 species with *R. odorata* is the common Mignonette. They are noted for their fragrance, are tender annuals and when started indoors are best handled in pots as they do not transplant easily. Thrives in a cool moderately rich soil in partial shade; in the greenhouse grow in cool part around 48 degrees F; they are very popular.

RESEDA ODORATA: Comes in shades of blue.

—Allen's Defiance. Compact, florets immense size; very fragrant.....	MIG-1A. 15¢
—Machei Giant. Pyramidal growing plants, very nice; 12".....	MIG-1M. 15¢
—Golden Goliath. Golden yellow fls; 12".....	MIG-1MG. 15¢
—Red Goliath. Large red fls; special strain; 12"; fragrant.....	MIG-1MR. 15¢
—White Goliath. Best large white.....	MIG-1MW. 15¢
—Bismarck. Beautiful flat top and large spikes.....	MIG-1B. 20¢
—Gabrielle. Robust, heavy red spikes.....	MIG-1G. 15¢
—grandiflora. Large flowered, 16" tall.....	MIG-1F. 15¢
—Red Monarch. Deepest red; perfect form.....	MIG-1R. 15¢
—Victoria. Brilliant red; prize won.....	MIG-1V. 15¢
—Mignonette Blend. All varieties mixed.....	Oz. 30¢ MIG-X. 10¢

MIRABILIS. (my-RAB-e-lis) FOUR O'CLOCKS, MARVEL OF PERU. Nyctaginaceae.

Annuals and perennials, all of which are tender and grown as tender annuals in the North. The seeds are best sown where the plants are to grow and in the fall the roots can be taken up and stored in the root cellar over winter.

—Jalapa. Four O'Clocks. Red, yellow, white; 3 ft; TP as TA 25¢ Oz.....	MIRA-6X. 15¢
—Dwarf. A dwarf compact type in red, yellow and white; 2 ft.....	MIRA-6DX. 15¢
—Dwarf Varigated. Varigated leaves; mixed colors; 2 ft.....	MIRA-6DV. 20¢
—longiflora v. White. White fls; 3 ft; TP grow as TA.....	MIRA-7W. 20¢
—Violet. Violet fls of same.....	MIRA-7V. 20¢
—Mixed. Violet and white mixed.....	MIRA-7X. 15¢
—uniflora. Bright rose; showy and unusual; free blooming.....	MIRA-10. 20¢
—Mirabilis Blend. All kinds mixed.....	Oz. 25¢ MIRA-X. 15¢

MULGEDIUM: see *Lactuca*.

MONARDELLA. (mon-ahr-DEL-ah) Labiatae.

Fragrant western American plants both annual and perennial. They are grown in the rockery in light sandy soil. Native of California.

—villosa. Purple, pink and white 2-lipped fls; hot places; 6"; HP.....	MONA-8. 30¢
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MUSCARI. (mus-KAY-ry) GRAPE HYACINTHS. Liliaceae.

Spring blooming bulbs with urn-shaped nodding fls in racemes or spikes. They are easily grown, both from seeds and bulbs; for the latter see the fall bulb listing. Used especially for colonizing in mass plantings.

—azureum. (Hyacinthus) Fls in erect racemes, 1 ft; HP.....	HYAC-2. 25¢
—comosum. Blue or violet fls; 1 ft; HP.....	MUSC-3. 25¢

MYOSOTIS. (my-oh-SOH-tis) FORGET-ME-NOTS. Boraginaceae. (16 days)

Small annuals, biennials and perennials with many small blue, rose or white flowers in terminal racemes. They thrive in a cool moist partially shaded places. They are grown in the low border and are especially nice. They bloom the second year or if started early, in the fall of the first year.

VARIETY LISTING: We list here all the varieties following; some belong to a species but most are hybrids of superior breeding.

—A. Fischer. Deep blue, large fls; very choice; 8 in.....	MYOS-1A. 25¢
—Blue Ball. Deep indigo blue; compact ball-shaped plants, 10".....	MYOS-1B. 25¢
—Blue Bird. A large flowered variety in dark blue.....	MYOS-1D. 25¢
—Blue Eyes. Pretty bright blue with white eye.....	MYOS-1E. 25¢
—Boden. A Swiss variety of perfect form; very dark blue fls.....	MYOS-1N. 25¢
—Gerda Seager. Blooms 8-10 days earlier; pretty blue.....	MYOS-1S. 25¢
—Indigo Blue. Very deep blue form.....	MYOS-1G. 25¢
—Marga Seager. Excellent pot plant for forcing; large blue fls.....	MYOS-1R. 25¢
—Messidor. Rich blue color.....	MYOS-1M. 25¢
—Star of Love. Sky blue, nice pot plant; floriferous.....	MYOS-1T. 25¢
—Sylphe. A pure white form.....	MYOS-1W. 25¢
—Victoria. Dwarf, dark royal blue.....	MYOS-1V. 25¢
—Mixed Myosotis. All the varieties equally mixed.....	MYOS-X. 20¢
—arvensis. White and blue; best for naturalizing; 18"; HA or HB.....	MYOS-2. 15¢

This seed list continues from page to page and from issue to issue and runs alphabetically.

NEPETA. (NEP-e-tah) CATNIP. Labiatae.

Aromatic annuals and perennials with white and blue flowers in whorls, clusters or spikes. Some species are very pretty and can grow in shady places. They all are easily grown from seed.

—Catania. Catnip. Whitish or pale purple fls; 1½ ft; HP.....	NEPE-3. 10¢
—Mussinii. Blue fls with dark spots; bushy, pretty; 18"; HP.....	NEPE-10. 15¢

ONOSMA. (oh-NOZ-mah) Boraginaceae.

Annuals, biennials and perennials with extremely attractive flowers in white, yellow or purple in one-sided clusters. They do well in sun or shade and are suitable for the border or rockery. Not hard to grow.

—stellulatum v. tauricum. Gold Drop. Golden yellow; wall plant; 8"; HP....	ONOS-8. 25¢
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OENOTHERA. (ee-noh-THÉE-rah) EVENING PRIMROSE. Onagraceae. (5 days)

A very large and extended group of annuals, biennials and perennials, all sun loving, dry land plants easily grown from seed. The common color is yellow with some reds and pinks.

—Drummondii. Bright yellow 2" ac; 1-2 ft; HA.....	OENO-23. 15¢
—fruticosa. Showy yellow fls 2' ac; dry land; 1-3 ft; HP.....	OENO-26. 15¢
The correct classification now is <i>Erythrosepala</i> .	
—rhombipetala. Yellow fls 2" ac; 4 ft; HB.....	OENO-51. 20¢
—missouriensis. Yellow fls 4-6" ac; showy; 1 ft; HP.....	OENO-40. 15¢
—odorata. Yellow fls fading to reddish, fragrant; to 4 ft; HA.....	OENO-43. 15¢
—Lamarckiana. Yellow fls 2" ac; 3 ft; HP.....	OENO-33. 15¢
—Oenothera Mixture. All species mixed.....	OENO-X. 15¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Viburnum for the Birds

Outside of the value of Viburnums as ornamental shrubs, they being one of the best, they should be of great value to those interested in the growing of food for the birds. All the species are very good for this purpose.

Seedlings, when they are 6 inches or a foot high, can be transplanted to the edges of pasture lands, near to the wood lot and many other places, as well as in the shrubbery planting in one's yard, with the result that a much larger bird population will be had.

The seed should be sown in the fall and thus stratified. One method of stratifying the seed, is to sow them in rows 3 or 4 inches apart. Cover this with an inch of sand and then 3 or 4 inches of soil. This will keep the seed deep enough to be moist and to allow the winter freezing to do its part. Then the first thing in the spring, remove the soil. By using the inch layer of sand, you can tell where the seeds are and thus will not disturb them. They should show germination soon afterwards.

In all cases of trees and woody shrubs, the seed bed should always be made to stand two springs as it often happens that seed will germinate after two winters.

HYPERICUM KALMIANUM

It is usually found in rocky soils, often in some shade and grows to 2 feet high.

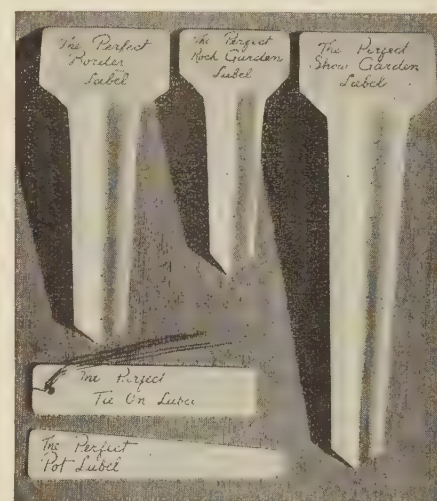
The leaves are glaucous, green, narrow and attractive, which makes the plant ornamental from spring to autumn but from late July and into September its a real beauty with its mass of bright yellow flowers.

It is among the hardiest of the St. John's-worts and should be planted in a well drained, partly shaded place.

PERFECT LABEL

MARK with ORDINARY LEAD PENCIL

Mark with your ordinary lead pencil; it is permanent and will not fade or become unreadable. If you wish to make any changes an ordinary eraser will remove the writing.



PRICES

5 inch; width of marking space 2 inches:
12 labels; \$1.25; 25 for \$2.40; 100 \$9.25

7 inch; width of marking space 2 1/8 inches.
12 labels: \$1.50; 25, \$2.90; 100, \$11.25.

PIONEER SEED COMPANY
DIMONDALE, MICHIGAN

A Suggested Garden House

The little tool house shown in our August issue, which was used by Dr. Beal in his botanic Garden at East Lansing, suggests a similar one, with modifications, for the small yard garden.

The enjoyment gotten from your garden is often discounted for lack of tools or, if you have them, for lack of a convenient and handy place to keep them where they can be quickly gotten to. Besides, just having a place for the hoe, rake and shovel, is only a small part of the tool house. One wants a little raffia, or a stake, or the garden note book or may be a pencil to make a label, so many little things, if handy, increases the pleasure of the garden. You may want to give a small seedling to friend or visitor and if you can lay your hand on the trowel, a sheet of wrapping paper, some damp moss and a string as well as a place to wrap it, without taking the rest of your spare time to locate them all, what an added pleasure your garden will be!

My suggestion is to use a space on the north side of your garden, if at all possible, and build yourself a sort of cupboard! This need be only 1½ feet deep, if space demands it but not over 3 feet at most. The width can vary, but 6 or 7 feet wide, will serve its purpose better. For height, at least 6 or 7 feet. This can be built on a few blocks and of 2x4s. It should be sided with matched lumber, but the front should be made so as to open up, like any cupboard. For the top, make it to imitate a roof, just as if you had a little house and the eaves can be extended over the front 2 feet or so, to provide a covering to work under.

There are many variations, this roof part can take; even a false window can be put on hinges and be placed in the gable where light things can be stored. For the front, this can be made in various ways, but if the sides are carried around 6-10 inches on the front and a 2x4 put in for the frame, on which the front doors can be hinged, you can hang such long tools as the rake, hoe and shovel, as well as bamboo stakes, etc. Two doors can be made to cover the front and to swing out from the center, that is the hinges should be at the sides. On the inside of the doors, small light things like stakes, raffia, etc., can be placed, as well as pruning shears, saws, so often hard to find when you want them.

Inside, you first want to make a work bench. This wants to be about 32 inches from the ground and made out of heavy

Parsley will remove all traces of onions or garlic, from the breath, if eaten afterwards.

lumber or covered with sheet metal. On this you can do your potting, transplanting, etc., and under this bench you can provide 2 or 3 bins for your soil. If your "house" is 2 or 3 feet deep, you can have quite a little space in which you can store, some good screened loam, some decayed manure or mixed compost. On a shelf, above this and just under your work bench, some wooden boxes can be set to hold lime and fertilizers.

Above the work bench you will have shelves holding the various things needed to make your spare moments in your garden a pleasure. Your sprays and dusts should all be in quart glass jars; your sprayer and duster in its place and various small items.

When you find you have a half hour to spend amongst your flowers, all you have to do is to unlock the doors, swing them apart and there you are—Every thing right at your elbow! A small flat basket to hold gloves, note book, hand trowel, etc., will be handy and will also prevent them being left on the ground.

Now, if you are fortunate to be able to place your "tool house" on the north side of your garden, you can extend the idea to a cold frame or even a hot-frame, by building them at the sides. Even a place with boards around it to serve as a cold frame, where your seedlings can be placed and where they can be covered with glass or lath. Even brackets can be placed above the doors of your "work house" on which you can place 2 or 3 flats that are just germinating, where they can get the sun but be protected from hard rains by the eaves above. One of the little frames can be made into a little Tom Thumb greenhouse by adding the electric heating wires now sold and many early plants thus started.

A small bed for cuttings can be added and no end to the many little conveniences that you can make.

Last, but not least, is the covering for the "house" so that it will look like a real building built into the shrubbery or trees, with but the front in view. Some hardy vine should be planted at the sides and trained up over the roof to make this effect; even a grape vine could be worked in here and what garden should be without one grape vine in it?

We hope some of our readers already have such a "house" and that we may have pictures and discussions on it.

JOHN INNES COMPOSTS

Continued from Page 113
it is recommended that the amounts should not be varied. This latter compost can also be used in flats for seedlings. Good garden soil gives just as good results as the best loams, providing it is in good physical condition.

A clean sand and a good grade of peat moss need not be sterilized which leaves only the loam and garden soil. It is possible to get good results, even when the soil is not sterilized but one should use care to secure soil that is not liable to be diseased by former plants.

Sift the loam thru a ½ inch sieve before mixing. In storing, it is best to hold only two months; if longer, then store the soil, and mix later.

On no account should hardy Fuchsias be pruned except in the spring when they should be given liquid manure. Best time to transplant them is in May.

Annuals Under Glass

Many annuals can be sown in September and October for flowering early in the spring. After the seedlings are large enough to transplant, move them to two inch pots and place them in a part of the greenhouse that is on the dry side, to avoid damping-off. They should also be watered carefully, not too much. When the roots have developed well and fill the pot, liquid manure may be given them once a week.

The following are suggested:

Alonsoa Warscewiczii compacta, 10 inches high, and with pretty scarlet flowers.

Antirrhinum or Snapdragon, use the intermediate type, sowing varieties separate or mixed colors if you prefer.

Clarkia will grow to 4 feet; pinch back at the start; use the double flowered type.

Godetia, either double or single and plant the taller type, 3½ feet high.

Mignonette should be planted direct to the pots as it resents being disturbed. Use the Machet or any special pot type.

Nicotiana affinis grows to 3 feet and N. suaveoleus has smaller flowers, both sweetly scented. These can be grown in a shady part of the greenhouse and are especially fragrant in the evenings and early morning.

Nemesia grows to one foot; use any of the large flowered sorts.

Phacelia campanulata will bloom within six weeks from sowing. It is dwarf and showy.

Petunias are always the favorite. The doubles and large single types are best for pot culture. Personally, I like the dwarf, compact small flowered kinds for pots, especially where a neat compact plant is wanted. The doubles and large flowered fringed types like the new Ramona strains are very popular and especially for later sales in the spring.

For a low growing annual the Rhodante are good with their daisy-like everlasting flowers.

Salpiglossus is another very popular pot plant. Its flowers are beautiful and for inside growing get only the very best strain. It grows to 3 feet.

Scabiosa grows to 3 feet and comes in several nice colors.

Schizanthus or Butterfly Flower is a valuable pot plant as it is always covered with its pretty flowers.

Limonium sinuata and L. Suworowii make good pot plants; the latter especially is nice.

In Stocks, either the Ten-Week, Beauty of Nice or Brompton types can be used. They come in several colors and it would seem that one color in a pot would be best.

Ursinia is 9-10 inches high and with pretty orange flowers that close in the evening and on dark days.

NOTE: Many of our readers have small greenhouses and only those possessing one can realize the pleasure it will afford its owner. We wish that any of our readers who have such a garden work house would write about it, that others may build one.

GROWING PALMS FROM SEED

The essential requirement in growing Palms from seed is a high temperature of 85 degrees F. Seed can be sown any time.

After they are potted, a summer temperature of 60-65 degrees and a winter temperature of 45-55 is necessary.

They do not need repotting often but should be top-dressed with new soil and liquid manure can be given them twice a week during the summer months, especially if the roots are restricted.

GET EVERY ISSUE — \$2.00 PER YEAR



PIONEER SEED CO. DIMONDAL MICH.
Pioneer Seeds

SEEDS FOR FALL PLANTING

During the heat of summer, enthusiasm for gardening often lags, to return with the cool days of early fall. There is much work to be done at this time, removing the weeds for which one could not summon energy on blazing August days, planting the fall bulbs and the lilies, as well as the bearded Iris, if this was not done on schedule, moving shrubs to more suitable positions, and a host of minor details which will help to avoid the spring rush.

A little time should be taken for sowing of seeds, some of which must be planted in the fall, while others will do quite, or nearly, as well as if sown in the spring and in addition will be stronger and better able to survive the summer. A well worked nursery bed, in some out-of-the-way spot, will be satisfactory, especially for the larger seeds.

It will pay, however, to nail four boards together into a rectangle, to make a cold frame, even a rough one; if a hotbed sash or old window is available to place over the top, very well, but wire cloth will serve about as well, and is far less expensive. The latter may be simply tacked over the frame, not to be removed until fairly settled spring weather, but if glass is used, it should be removed during freezing weather to allow the full effect of snow and cold on the seeds.

Seeds for fall sowing fall into two classes. The first, comprising those that will not germinate before spring under any conditions, may be sown as the seed is obtainable. Others, which may take a fancy to coming

Continued on Page 131

Some Desirable Flowers from the Best English Gardens

You will find some very attractive flowers in the following. They will be found in the seed listings.

Lathyrus cyaneus. Russia and Siberia; perennial herbaceous plant of 12 inches or so; deep blue, pea-shaped flowers in profusion in early summer; any well drained soil, sun.

Arenaria Kotschy. Eastern Europe and Caucasus; compact rock garden plant; glossy tufts of leaves and many white flowers on short stems in summer; 2-3 inches high.

Potentilla argyophylla atrosanguinea. Himalaya; rather sprawling habit; lax stems of 15-18 inches, silver leaves and deep crimson-red flowers 1½ inches in diameter; summer; any soil and in full sun.

Cerastium alpinum lanatum. European Alps tufted, silver-leaved rock garden plant; choice and not invasive; for gritty scree soil and sun; quite large white flowers on one inch stems; a fine cushion plant.

Dianthus x La Bourboule. (Hybrid); A choice form of *D. arvensis*; neat tufts of silvery gray leaves and short-stemmed deep pink flowers in late summer; comes true from seed; lovely cushions plant.

Saxifraga cochlearis major. Fine form of this European Encrusted Saxifraga; tight pads of silver rosettes and 6 inch, red stems bearing innumerable large white flowers; mid-summer; sun and gritty soil; requires lime.

Silene alpestris fl. pl. European Alps; dark leaves in low tufts and pure white, fully double flowers on 4 inch stems in spring;

any well drained soil and sun; sets few seeds normally, but comes true.

Cytisus hirsutus demissus. VERY RARE; The best of all the really dwarf, prostrate rock garden Brooms; trailing stems and immense brown and deep orange-yellow flowers in summer; a really rare and handsome plant; not difficult in sun and even poor soil.

Antirrhinum Asarina. Italian Alps; Trailing Snapdragon for rock garden with very large cream and yellow flowers; easy in cool soil and light shade; all summer.

Codonopsis ovata. Himalaya; Semi-climbing plant with very large, soft blue bells marked with vivid orange within; roots in cool soil and the heads in full sun; early summer.

Allium sphaerocephalum. Tall, pretty Allium from Europe and the Orient, 2 foot stems carry very large globular deep red heads of many small flowers all summer; any soil; full sun.

Linum narbonense. The best form of this inch-wide gentian-blue flowers all summer; well drained soil and sun.

Anemone Lesseri. Dwarf form, ferny leaves and deep pink flowers on six to nine inch stems; summer and late summer; any soil and sun.

Dianthus deltoides Bowle's Variety. Very dark foliage in prostrate mats and crimson flowers in mid-summer; comes true from seed; the finest form of Maiden Pink.

Hebe macrantha (Veronica macrantha)

Continued on Page 133

BAUHINIA PURPUREA



Beautiful flowering tree for the far South. They are native of China and India; flowers are red; there is also a white variety.

TREE SEEDS

CONIFERS and Miscellaneous Evergreens:

PACKETS are 50¢ each; 4 Oz at the lb. rate; d.b. means dried berries; c.s., cleaned seed.

DELIVERY: Starts in the fall and many not until in the winter months; seed orders should be placed as soon as possible, because tree seeds are always hard to collect with labor high and only enough is collected to cover the usual orders.

ABIES BALSAMEA (Balsam Fir) Alberta Seed \$4.00 lb.

ABIES BALSAMEA (Balsam Fir) Wisconsin grown seed \$4.00 lb.

ABIES CONCOLOR (Concolor Fir) Colorado grown seed \$4.00 lb.

ABIES CONCOLOR var. **LOWIANA** California grown seed \$4.00 lb.

ABIES GRANDIS (Grand Fir) (Hardy) Idaho grown seed \$3.50 lb.

ABIES GRANDIS (Grand Fir) Washington grown seed \$3.50 lb.

ARCTOSTAPHYLOS UVA-URSI (Bearberry or Kinnikinnick), dried berries... \$2.50 lb.

BIOTA ORIENTALIS (Chinese Arbor Vitae) Austrian grown seed \$2.25 lb.

JUNIPERUS COMMUNIS (Bush Juniper) Montana grown seed \$2.50 lb.

JUNIPERUS HORIZONTALIS GLAUCA. (Blue Creeper) Montana d.b. \$2.50 lb.

JUNIPERUS SCOPULORUM (Silver Juniper) Montana d.b. \$1.75 lb.

JUNIPERUS SCOPULORUM (Silver Juniper) Montana c.s. \$6.00 lb.

JUNIPERUS UTAHENSIS (Utah or Desert Juniper) Utah c.s. \$4.00 lb.

JUNIPERUS VIRGINIANA (Red Cedar) Wisconsin grown seed, c.s. \$6.00 lb.

JUNIPERUS VIRGINIANA (Platte River Red Cedar) Nebraska seed c.s. \$6.00 lb.

(Note: All Juniper c.s. will test 90% plus)

Continued on Page 136



THE LATEST LIST OF TREE AND SHRUB SEEDS

This list may appear only once during the season; orders are filled as the fresh seed is received, most of which comes in after the first of the year. All quantity orders are acknowledged by letter. To be reasonably sure of delivery orders should be placed well in advance. All orders are accepted subject to crop delivery to us. D. b. means dried berries; an (*) means new or kinds of which there is not sufficient experience had to be able to recommend.

PRICES: Packets are all 25¢ each unless otherwise stated; ¼ lb. lots at pound prices. Write for special quotations on large quantities. Where prices per oz. is \$1.00 or over, ¼ oz at same rate. Subject to change without notice.

	per Oz.	Lb.
ABIES Fir (AY-bch-eez)		
amabilis	.70	6.80
balsamea, clean	.60	4.00
cephalonica	.50	3.80
celica	.50	4.00
concolor, Calif. Iowa var.	.50	4.30
firma	.30	3.00
homolepis	.50	5.30
lasiocarpa	.70	6.80
magnifica shastensis	.50	4.80
nobilis (procera)	.70	6.80
nordmanniana	.25	2.50
pectinata (alba)	.25	1.50
pinsapo	.30	3.00
pinsapo glauca	.40	3.60
veitchii	.50	4.80
ACACIA (ak-KAY-see-ah)		
armata	1.60	
baileyana	.45	4.25
cultiformis	.55	5.50
cyanocephala	.30	3.00
cyclops	.25	3.00
decurrens	.25	2.00
decurrens dealbata	.25	2.00
decurrens mollis	.40	3.20
decurrens normalis	.80	8.00
farnesiana	.40	3.00
longifolia	.40	3.00
longifolia floribunda	.45	4.00
melanoxylon	.40	3.50
ornithophora	1.50	
pendula	250 seeds \$2.00; 1000	\$4.00
podalyaefolia	.90	7.80
pycnantha	.40	3.00
retinodes floribunda	.40	3.00
saligna	.25	1.80
vericillata	3.00	
ACER Maple (AY-ser)		
campestre	.25	1.50
ginnala	.40	4.00
japonicum	.40	4.00
negundo	.25	1.50
palmatum small seeded	.50	4.30
palmatum garden specimens	.60	5.50
palmatum atropurpureum	.90	7.40
—dissectum	3.00	20.00
platanoide N.E.	.25	1.40
saccharum	.25	2.00
—New England Crop	.30	2.80
spicatum N.E.	.40	4.00
arguta	1.50	10.00

AILANTHUS (ay-LANTH-us)		
glandulosa	.40	1.40
AKEBIA (ak-KEE-bee-ah)		
quinata	.40	3.50
ALBIZIA (al-BIZ-ee-ah)		
julibrissin	.25	1.60
—rosea (hardy strain, Zone 5)	.70	6.00
lophantha	.35	3.20
ALNUS (AL-nus) Alder		
cordata, clean	.40	3.00
glutinosa, clean	.25	1.80
incana, clean	.25	2.20
rugosa, clean, N.E.	1.20	12.00
viridis, clean	.25	2.50
alnifolia D.B.	.25	2.50
canadensis, D.B.	.60	6.00
grandiflora, N.E., D.B.	.80	9.50
laevis, N.E., D.B.	.80	9.50
stolonifera, lge ft. type D.B.	.70	5.40
AMARPHA (am-MORF-ah) False Indigo		
fruticosa	.25	1.50
*nana (microphylla)	.25	1.70
AMPELOPSIS (am-pel-OP-siss)		
*heterophylla, N.E., D.B.	.80	9.00
quinquefolia, clean	.25	2.00
iricuspidata, clean	.35	2.60
ARALIA (ar-RAY-lee-ah)		
spinosa	.55	5.00
ARBUTUS (arb-YEW-tus)		
unedo, clean	1.00	10.00
ARCTOSTAPHYLOS (ark-toh-STAFF-el-os)		
uva-ursi, clean	.40	4.00
ARDISIA (ard-DIZ-ee-ah)		
crispa (crenulata)	.40	4.40
japonica	.50	5.00
ARISTOLOCHIA (ar-ris-toh-LOH-kee-ah)		
tomentosa	.30	3.00
ARONIA (ar-ROH-nee-ah) Chokeberry		
arbutifolia, D.B.	.30	3.00
—brilliantissima, D.B.	.35	3.50
prunifolia (atropurpurea) D.B.	.25	2.00
melanocarpa, D.B.	.25	2.50
ASIMINA (ah-SIM-in-ah)		
trilobata	.25	2.50
AUCUBA (au-KEW-bah)		
japonica	.30	2.80
AZALEA (az-ZAY-lee-ah)		
alabamensis	Pkt. 75¢	
austriana	Pkt. 75¢	
calendulacea, N.E.	Pkt. 75¢	4.00
canescens	Pkt. 75¢	
Exbury Hybrids, choice	Pkt. \$1.00	
Ghent Hybrids, choice	Pkt. \$2.00	
indica (cultural "indica")	Pkt. 75¢	
*japonica (hardy mollis)	Pkt. 75¢	
japonica (Japan)	Pkt. 75¢	
kaempferi home grown, N.E.	Pkt. 75¢	

— (imported seed)	Pkt. 75¢	
—Hybrids, N.E.	Pkt. \$1.25	
mollis yellow & orange shades	Pkt. 75¢	
— (imported seed)	Pkt. 75¢	
—Hybrids	Pkt. 75¢	
nudiflora	Pkt. 75¢	
oblongifolia	Pkt. 90¢	
obtusifolia arnoldiana, hardy Kurume	Pkt. 70¢	
—japonica (kuisiana)	Pkt. 75¢	
—kurume, from named varieties	Pkt. 75¢	
occidentalis Hybrids	Pkt. 75¢	
ponica, from northern gardens	Pkt. 75¢	
— (Southern Europe)	Pkt. 35¢	
*poukhanensis, N.E.	Pkt. 75¢	
prunifolia	Pkt. 75¢	
rosea, N.E.	Pkt. 75¢	
schlippenbachii (Korean Strain)	Pkt. 75¢	
vaseyi	Pkt. 75¢	
BERBERIS (BER-ber-is) Barberry		
thunbergii, clean seed	.55	5.00
—atropurpurea, clean sd	Pkt. 1.50	17.00
—pluriflora, from selected plts.	1.50	
BETULA (BET-yew-luh) Birch		
alba (odorata or pubescens)	.25	2.50
alba pendula	.25	1.70
—clean seed	.40	3.80
japonica	.40	3.80
lenta	.40	3.80
lutea	.40	3.80
maximowicziana	.50	4.40
papyrifera	.40	3.80
—clean seed	.90	7.50
—minor	.90	12.00
populifolia	.40	3.80
BIGNONIA (big-NOH-nee-ah)		
grandiflora	.50	4.80
radicans	.40	4.00
BROUSSONETIA (broo-soh-NEE-she-ah)		
papyrifera (Paper Mulberry)	.60	6.00
BUDDLEIA (bud-LEE-ah)		
—from garden forms	Pkt. 50¢	2.50
japonica	Pkt. 50¢	4.00
BUXUS (bux) Box		
sempervirens	.40	3.50
CALLICARPA (kal-le-KARP-ah)		
americana	.40	3.50
CALLUNA (kal-LEW-nuh) Heather		
vulgaris, clean	Pkt. 50¢	1.20
CALYCANTHUS (kal-ik-KANTH-us)		
flordus	.25	2.40
CAMELLIA (kam-MELL-ee-ah)		
jjaponica	.35	2.50
—Japaneses seed	.35	3.00
—garden specimens	.35	3.00
sasanqua	.35	3.00
CARAGANA (kar-ag-GAY-nah) Pea-tree		
arborescens	.30	2.80
boisi	.90	
sibirica	.90	
tibetica	.90	

Continued on Page 131

TREE & SHRUB SEED CONTINUED

Continued from Page 130

CARPENTERIA (kar-pee-TEER-ee-ah)		
californica	Pkt. 75¢	6 00
CARPINUS (kar-PIE-nus) Hornbeam		
betulus, clean	.25	1.60
caroliniana, clean	.40	
CASSIA (KAS-ee-ah) Senna		
artemisioides	1.40	
CASUARINA (kas-yew-ah-RYE-nuh)		
cunninghamiana, N.E.	1.40	
equisetifolia	1.40	
stricta	1.40	
CATALPA kat-TAL-pah)		
bignonioides	.25	1.60
ovata	.25	2.00
speciosa	.25	2.50
CEANOTHUS (see-an-NOHT-us)		
americanus, clean	.80	7.50
arbores	1.40	
cyaneus	1.60	
megacarpus	1.40	
spinosus	1.40	
thyrsiflorus	.55	5.00
CEDRUS (seed-RUS) Cedar		
atlantica	.30	3.00
— argentea	.35	3.50
— glauca	.40	4.00
deodara	.30	3.00
libani	.40	4.00
CELASTRUS (sel-LAST-rus)		
orbiculatus, clean	.35	3.50
scandens, D.B.	.40	4.00
CELTIS (SELL-tis) Hackberry		
mississippiensis (laevigata)	.35	2.25
occidentalis, clean	.25	2.00
CEPHALOTAXUS (sef-al-oh-TAX-us)		
fortunei	.25	2.50
pedunculata	.25	3.00
CERATONIA (ser-ah-TON-ee-ah)		
siliqua	.30	2.50
CERCIDIPHYLLUM (ser-sid-if-FILL-um)		
*japoicum	.75	6.50
CERCIS (ser-CISS) Red-bud		
canadensis	.35	3.00
chinensis	.70	6.50
occidentalis	.35	3.25
siliquastrum	.25	1.50
— (alba)	.25	1.75
CHAMAECYPARIS (kan-ee-SIP-ar-us)		
lawsoniana (False Cypress)	.25	3.00
— from garden forms	.35	3.50
— argentea	.35	3.50
— aurea	.35	3.50
— pendula glauca	.40	3.75
— pyramidalis	.35	2.50
— Triumph de Boskoop	.40	4.00
*nooitkatensis	.55	5.50
obtusa	.35	3.50
— from namedd garde forms	.55	5.00
— aurea	.50	5.00
pisifera	.50	5.00
— filifera	.55	5.50
— plumosa	.60	5.75
— aurea	.70	6.50
CHAMAEROPS (kam-MEE-rops)		
humilis	.25	1.50
CHIONANTHUS (kye-oh-NANTH-us)		
virginicus, clean	.35	3.50
CINNAMOMUM (sin-am-MOH-mum)		
camphora	.25	2.00
CITRUS (SIT-rus)		
trifoliata	.25	1.50
CLADRASTIS (klad-RAST-iss)		
lutea	.45	4.00
CLEMATIS (KLEM-at-us)		
alpina	Pkt. 50¢	10.00
montana	1.25	
— rubens	1.75	
paniculata, imported	1.00	
vitalba	.25	2.00
viticella	.25	3.50
CLERODENDRON (kleer-oh-DEN-dron)		
trichotomum	.35	3.25
CLETHRA (KLETH-ruh) White Alder		

acuminata	1.60	
alnifolia, N.E.	.45	4.00
tomentosa	1.60	
COCULUS (KOK-yew-lus)		
carolinus	.25	2.50
COCOS (KOH-koss)		
australis, clean	.35	3.75
campestris, clean	.35	3.25
plumosa	250 seeds \$2.00;	1000, \$6.00
COLUTEA (kol-LEW-tee-ah)		
arborescens	.25	2.75
CORDYLINE (kor-dee-LYE-nee)		
indivisa (Dracaena)	.50	4.50
CORNUS (KORN-us) Dogwood		
alba	.45	4.25
alternifolia, NE, DB	.35	3.50
amomum DB	.35	3.25
asperifolia, DB	.30	3.00
canadensis, NE	.50	4.00
florida, clean	.30	2.75
florida, db, NE zone 4	.30	3.00
kousa, clean	.45	4.25
mas, clean	.25	2.50
rugosa, db	.30	3.00
paniculata db	.35	2.00
sanguinea, clean	.25	1.50
stolonifera, db	.25	2.00
CORONILLA (kor-oh-NIL-ah)		
emerus	.60	
CORYLOPSIS (kor-il-LOP-siss)		
sinensis	Pkt. 50¢	2.00
CORYLUS (KOR-il-us) Hazelnut		
americana	.30	2.00
avellana	.25	1.50
COTONEASTER (kot-toh-nee-AST-ter)		
acutifolia, clean	1.20	
adpressa, db	2.50	
bullata, clean	.55	5.00
bullata floribunda, db	.75	
*dielsiana major, db	.75	
divaricata, clean	.80	7.50
foveolata, clean	.65	6.50
francheti, clean	.55	5.25
francheti cinerascens, db	.80	
horizontalis, clean	.55	5.50
horizontalis perpusilla db	Pkt. 50¢	
lucida, clean	.80	8.00
microphylla, clean	.55	5.00
*multiflora, db	.75	9.50
*— calocarpa	.75	9.00
nitens, db	.75	9.00
pannosa, clean	.55	5.50
prostrata lanata	.70	
rosea	Pkt. 50¢	2.50
salicifolia, clean	.60	5.25
simonsi, clean	.55	5.25
CRATAEGUS (krat-TEEG-us) Hawthorn		
arnoldiana, clean	.50	4.00
coccinea, clean	.35	3.25
cordata (phaenopyrum) clean	.45	4.50
crus-galli, clean	.35	3.00
mollis, clean	.35	3.00
nitida, clean	.55	6.00
oxacantha, clean	.25	2.00
— monogyna, clean	.25	1.75
pinnatifida, clean	.45	4.50
prunifolia, clean	.45	4.50
punctata, clean	.45	4.50
tomentosa, clean	.50	5.00
CRYPTOMERIA (krip-toh-MEER-ee-ah)		
japanica, European seed	.30	3.00
— Oriental seed	.40	4.00
— elegans	.40	4.00
— lobbi	.45	4.00
CUNNINGHAMIA (kum-ming-HAM-ee-ah)		
lanceolata	.65	7.00
CUPRESSUS (kew-PRESS-us) Cypress		
arizonica, imported seed	.45	4.00
— domestic seed specimen trees	.55	5.50
*forbesi	1.25	13.00
funeris	.40	4.00
goeniana	.35	3.50
lusitanica glauca	.35	3.50
— benthami	.35	3.50
meconabiana	.65	6.50
macrocarpa	.45	4.50
— golden form	.50	5.00
— from garden specimens	.45	4.50
sempervirens horizontalis	.25	1.50
— stricta	.25	1.50
torulosa	4.35	3.50
— majestica	.35	3.50

Continued on Page 134

From an Orchid Grower

I am glad to notice that you are going to distribute Orchid seed. I am certainly interested in some of those listed and have enclosed an order for 10 packets.

By the way the book by Sander, Royal Orchid Grower's of St. Albans, England is very good and the chapter on growing them from seed is quite timely.

Another method of growing Orchid seed, which Mr. Sander does not mention, is growing the seeds on turkish toweling. Here one uses a number of small pots about 3 inches in diameter. Pieces of old turkish toweling are cut about twice the diameter of the pots. Both the pots and toweling are boiled to sterilize them; then the pots are filled half full of broken crock and then packed tightly with live sphagnum moss to the level of the top. Then the disc of toweling is placed over this and the edges worked down the edge of the pot. Next soak the pot in water and allow to drain. Then sprinkle a small pinch of seed over the cloth and cover the pot with glass bell jars. The pots should be placed in a warm shady part of the greenhouse. The bell jars should be lifted each day to allow a change of air, and the cloth kept moist by spraying with a very fine mist of water, being careful not to disturb the seed. It will probably be many months before the resultant seedlings are large enough for transplanting, when they should be treated as for seedlings grown on agar.

By Gertrude H. Ascher, Concord, Cal.

SEEDS FOR FALL PLANTING

Continued from Page 129

up during a warm spell in the late autumn, should not be put into the ground till the latest possible moment, normally in November; one does, of course, run the risk of an unusually early winter which will prevent such late sowing, in which case the seeds must be held over till early spring, unless you have taken precautions to have the seed bed covered with a light mulch, in which case the seed can be sown without much effort.

The following seeds will not germinate if sown in the fall and will lay dormant till spring, when they will germinate at the first opportunity.

Aconitum, Most Anemones, Calchortus, Clematis, Crocus, Crataegus, Daboecia, Dicentra, Dictamnus, Fritillaria, Helleborus, Ilex, Iris, Lilium canadum, L. giganteum, L. Jankae, L. martagon and its hybrids, L. macrophyllum, L. Mrs. Backhouse hybrids, L. pryanaicum, L. szovitzianum, L. Washingtonianum, L. Thompsonianum, Magnolias, Nomocharis, Paeonia, Penstemon barrettiae, P. cardwelli, P. fruticosus, P. linarioides, P. montanus, Phlox paniculata, Tulipa and many others.

Other hardy perennials and shrubs are best delayed until the last possible moment before the ground freezes; most of these will not germinate in the fall, but as the germination period is variable, it is best not to take chances, especially if the seeds are rare and valuable.

GERMINATING PRIMULA SEEDS

The most successful way to germinate Primula seed is to sow them immediately after they ripen, however, this is not possible in most cases, where the seed is raised at a distance and has to pass thru the hands of two or more parties.

Usually, the seed will become dormant, after standing for a while after ripening and then a space of a year may be required before they do germinate.

Be sure to sow the seed thinly.

HERBS

By Eleanor Chalfin

THE OLD FASHIONED WHEEL HERB GARDEN

Fall gardening fever can not compare with the high enthusiasm enjoyed in the spring, but there is always time and inclination to have a last fling if one is a real and earnest gardener. In either starting or enlarging an herb planting, a small project to excite in the autumn might be an old-timey wheel garden. This idea apparently has been very catching and will appeal to enough of our readers to warrant publication of practical suggestions for carrying out this novel arrangement.

The Wheel Herb Bed

Select a sturdy wagon wheel and cut out alternate spokes. This allows plenty of space for the herb plantings. Paint the wheel a neutral color such as dark green or gray. Please, do not use a harsh white as it is not at all appropriate and, to me, seems in poor taste. A black rim and hub is permissible, however. If a wagon wheel is not available, a ladder may be used to good effect.

The Site for the Bed

Choose a sunny, well drained spot and one that will harmonize with other surroundings. In other words, do not place it in the center of a grass plot, unless surrounded by conventional flower or herb beds. Near a circular group of shrubbery is good landscaping. Prepare the soil, having marked out the size of the wheel, by deep digging, add some humus and quite a generous supply of lime. (Most all herbs are lime-hungry plants). Cut out a hole in the soil for the hub and rim of the wheel so it lies flush with the ground. A wheel placed on top of the soil level is allowable if extra earth is added to make raised beds and frequent hoeing is applied during the summer months. Smooth the spaces between the spokes and it is ready for planting.

The Herbs to Plant

Decide first whether the plot is to contain culinary or decorative herb plants and select the varieties accordingly. In a confined space, it is wisest not to use both kinds. The most important point to remember is the size of the herbs when they are mature. They must be as equal in height as possible because the general effect is greatly marred otherwise. Do not attempt to use any of the taller sorts as they will look ungainly with in the wheel. The lower the herbs the better, in fact.

The creeping Thymes make the prettiest wheel. If only two kinds of low growing thyme are available, these may be put in alternate spaces. Four varieties are very effective as the different foliage shades will give tone and texture. In that case, repeat the types in opposite spaces in a diagonal manner. For the Seasoning Wheel, one might desire the following herbs: Winter Savory, Tarragon, Italian Parsley, Smallage (Wild Celery), Chives, Burnet, Sage, Garden Thyme and Mint.

The mint roots must be confined or they will spread and choke out the other herbs; using an old license plate or metal strips, sink them beneath the two spokes around the mint. Shallots or Chervil may be planted a-

Continued on Next Page

NASTURTIUMS - OPHIOPOGON

NASTURTIUM. (nas-TUR-ee-um) (*Tropaeolum*) Tropaeolaceae.

(8 days)

This is a much confused classification with Water Cress, *Nasturtium officinale* being the only listed species. The flowers listed in the trade and also commonly known as Nasturtiums belongs to the Tropaeolaceae Family, with the genus *Tropaeolum* being the only member. It has several species, including the Canary Bird Flower. The species major includes all the commonly grown Nasturtiums, both bush and climbing.

Grow them as tender annuals giving them a warm sunny position, planting seed direct to the soil. They also can be started in pots for setting outdoors when the weather is warm; they are tender and will stand no frost. They can be planted even in June here in Michigan. They are good for the Tulip beds, using the climber or tall type.

SEMI-DOUBLE GLEAM: A very popular type, with double and semi-double flowers.

The plants grow to 18" tall and are excellent for cutting Oz. 30¢; ¼ lb. 80¢.

- Crimson Glow. Deep glowing golden orange..... **NAST-1C.** 15¢
- Fire. All double bright scarlet..... **NAST-1F.** 15¢
- Golden Gleam. A lovely golden yellow variety..... **NAST-1G.** 15¢
- Indian Chief. A new double, sweet scented, dark leaves..... **NAST-1N.** 15¢
- Moon. Semi-double yellow..... **NAST-1M.** 15¢
- Orange Gleam. One of the best orange varieties..... **NAST-1A.** 15¢
- Salmon Gleam. Lovely and popular..... **NAST-1S.** 15¢
- Scarlet Gleam. An excellent red variety..... **NAST-1L.** 15¢
- Gleam Mixture. Contains all the colors and many hybrids..... **NAST-1X.** 15¢

GLOBE TYPE: Giant double flowers in all the colors; plants compact, 12" tall and excellent in beds, etc. Oz. 30¢; ¼ lb. 90¢.

- Black Beauty. Deep scarlet flowers and very dark foliage..... **NAST-2B.** 15¢
- Delightful. Soft salmon-cerise..... **NAST-2D.** 15¢
- Scarlet Emperor. Fine scarlet and dark foliage..... **NAST-2E.** 15¢
- Golden Globe. One of the best golden yellows..... **NAST-2G.** 15¢
- Golden Rose Emperor. Lovely rose color with dark leaves..... **NAST-2R.** 15¢
- Mahogany Gem. Deep mahogany color..... **NAST-2M.** 15¢
- Scarlet Globe. Very popular scarlet..... **NAST-2S.** 15¢
- Globe Type Blend. Made up of many varieties..... **NAST-2X.** 15¢

DWARF or TOM THUMB TYPE: These all have single flowers, the plants growing about 12" tall. They will stand more neglect than the double type.

- Empress of India. Velvety dark scarlet with dark leaves..... **NAST-3E.** 15¢
- Faiham Beauty. A rice brilliant scarlet..... **NAST-3F.** 15¢
- Fireball. Compact, dark leaves, bright scarlet fls well above foliage..... **NAST-3B.** 15¢
- King of the Tom Thumbs. Bright scarlet; dark leaves..... **NAST-3K.** 15¢
- King Theodore. Dark red; dark foliage..... **NAST-3T.** 15¢
- Lady Bird. Lovely rich yellow, scarlet spotted; dark leaves..... **NAST-3L.** 15¢
- Ruby King. Ruby-red flowers; dark foliage..... **NAST-3R.** 15¢
- Vesuvius. Brilliant salmon-rose; dark leaves..... **NAST-3V.** 15¢
- Single Mixed. Contains many fine varieties; all single flowers..... **NAST-3X.** 15¢

TALL or CLIMBING TYPE: These will grow 3'; should have some support; Oz. 30¢.

- Chamelon. Comes in several blends of colors..... **NAST-4C.** 15¢
- Dunnett's Orange. One of the best orange varieties..... **NAST-4D.** 15¢
- King Theodore. Dark foliage and dark red flowers..... **NAST-4K.** 15¢
- Pearl. Lovely cream white..... **NAST-4P.** 15¢
- Prince Henry. Lovely yellow with red spots..... **NAST-4H.** 15¢
- Von Molke. A lovely rosy blue..... **NAST-4V.** 15¢
- Tall Blend. Made up of many varieties..... **NAST-4X.** 15¢

OPHIPOGON. (o-fe-o-PO-gon) *LILY TURF* Liliaceae.

Turf forming plants with racemes of small whitish flowers and grass-like leaves, often striped and spotted with white or yellow. Useful for turf and border edgings that require no clipping. They are not extra hardy and in the North some are hardy up to Michigan. Grow in sun or shade.

- Clarkei..... **OPHI-4.** 30¢
- intermedius..... **OPHI-6.** 30¢

ORNITHOGALUM. (or-nith-THOG-alum) Liliaceae.

Bulbous plants with white, yellow or reddish fls in bracted racemes or corymbs. The tender species are grown in pots or in greenhouses.

- pyrenaicum. Yellow flowers..... **ORNI-13(C).** 30¢

OTHAKE: See *Polypteria Hookeriana*.

PANSY. (*Viola tricolor*) *Violaceae*.

(8 days)

Pansies are best grown as a hardy annual or biennial, especially in the North. They do best in a rich sandy soil and not exposed to the hot winds; they stand some shade. Seed can be started indoors very early in the spring and the plants shifted to flats and grown on to some size in the frame where they can have shade and water or they can be planted as late as the first of August and the seedlings after they have rooted in the flats from the first transplanting, they can then be set in their outdoor beds. Pansies are definitely cool weather plants and the hotter the winds and the sun, the less success.

GIANT FLOWERING SWISS GIANTS: Large flowering Pansies in all colors and combinations. They are very popular both for the home plantings and with the commercial growers who grow for the box trade. Write for prices in quantity.

- Alpenglow. A large flowered scarlet..... **PANS-1A.** 25¢
- Berna. Velvety dark blue..... **PANS-1B.** 25¢
- Black King. Dark black, one of the few black flowers..... **PANS-1K.** 25¢
- Blumilalp. Soft rose with beautiful velvety blotch..... **PANS-1L.** 25¢
- Claret. A beautiful wine red..... **PANS-1C.** 25¢
- Flame. Attractive orange scarlet..... **PANS-1F.** 25¢
- Mont Blanc. The best pure white..... **PANS-1W.** 25¢
- Orange Sun. A new bright orange variety..... **PANS-1S.** 25¢
- Rheingold. Deep golden yellow with dark blotch on lower 3 petals..... **PANS-1R.** 25¢
- Silver Bride. A clear glistening white..... **PANS-1V.** 25¢
- Ullswater. Marine blue with darker blotch; very showy..... **PANS-1U.** 25¢
- Yellow Master. Exceptionally fine deep yellow..... **PANS-1Y.** 25¢
- Swiss Giant Blend. Our best blend of varieties..... ¼ Oz. \$1.25 **PANS-1X.** 20¢
- W-F Swiss Giant Blend. A magnificent blend characterized by a predominance of rich velvety dark reds and browns together with uniformly compact plants and full rounded flowers; California grown seed..... ¼ Oz. \$2.75; Oz. \$9.00 **PANS-1WX.** 25¢

VARIOUS PANSY STRAINS: These are all large flowered types and only the best strains are listed. They include all types.

PANSY: Continued on Page 133

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

PASSIFLORA - PEDICULARIS

...PANSY: Continued from Page 132.

- Cassier's Giants. Golden yellow giants, all with large blotch..... PANS-2C. 25¢
- White. Large white fls with dark blotch, showy..... PANS-2CW. 25¢
- Three Bloches. Showy colors all with 3 large dark blotches..... PANS-2CT. 25¢
- Carnation Gold. Giant pure golden yellow; very showy..... PANS-2N. 25¢
- Englemann's Giants. With lighter tone around edges; no solid colors..... PANS-2E. 35¢
- Maple Leaf. Husky growers, dark green fol; full color range..... PANS-2M. 25¢
- Masterpiece. Daintily ruffled and frilled; rich in reds and browns..... PANS-2P. 25¢
- Orchid-Flowered. Waved and curled petals in a choice color range..... PANS-2H. 25¢
- Scottish Exhibition. Mammoth fls heavily blotched; circular outline..... PANS-2R. 25¢
- Florist or Market Strain. An extra choice hand made strain containing a good proportion of yellow, reds and blotched flowers with some new types added.
1/4 Oz. \$1.90; Oz. \$7.00; 1/4 Lb. \$20.00; Lb. \$73.00..... PANS-2F. 25¢
- Oregon Giants. Bright blend of giants; California grown seed..... PANS-2G. 25¢
- 101". NEW market grower strain in a beautiful selection of colors..... PANS-2B. 25¢

See article on the new Pansy '101' on page 33.

V. hiemalis: Ice Pansy. They flower very early, even in the snow, and while the flowers are smaller than the regular Pansy, they are distinct and showy, especially for the time of the year when they flower. They should be given a place in the garden or rockery so as to be protected from the hot summer sun.

- Blue Boy. Showy silver blue..... PANS-3B. 20¢
- Claret. Beautiful wine red flowers..... PANS-3C. 20¢
- Celestial Queen. Brilliant light blue..... PANS-3Q. 20¢
- March Beauty. Dark velvety purple..... PANS-3M. 20¢
- Winter Sun. Golden yellow with showy dark blotch..... PANS-3S. 20¢
- Zurich Sea. Very showy light blue..... PANS-3Z. 20¢
- Woden. Black; king of the spring garden..... PANS-3W. 20¢
- Hiemalis Blend. All varieties mixed..... PANS-3X. 20¢

PANSY BLEND... Contains all the kinds listed above..... PANS-X. 20¢

STEELE'S MAMMOTH PANSIES:

The following Pansies are direct from the Steele Pansy Seed Gardens and of their 1951 crop. These Pansies have enjoyed a world wide reputation for over thirty years. They are especially noted as the Mammoth Pacific Pansies.

JUMBO STRAIN:

- Pay Dirt. Largest golden yellow ever produced; dark rays and tiny dark faces; sistant to the summer heat..... PANS-4P. 50¢
- Jumbo Baconsfield. Upper petals rich lavender, lower deep violet; no blotch; beautiful..... PANS-4B. 50¢
- Jumbo Bronze Tones. Blend of many grand colors ranging from old gold, rich copper and sunset tones to deep browns. Many smoky blue-bordered types, rosy toned bronze beauties, all of excellent texture and immense size..... PANS-4Z. 50¢
- Madam Steele. Huge jumbo purple selection; wonderful for adding velvet violet shades for those wishing darker colors. No faded or magenta tones..... PANS-4S. 50¢
- Jumbo Blend. Many new and unique colors, pastel orchids, apricot, yellows, blues, brass tones, copper bronze, purple, reds, in addition to many multi-color combinations and selfs; flowers to 5 inches across..... PANS-4X. 40¢

1/16 oz. \$3.50; 1/4 oz. \$7.50; 1 oz. \$22.00.

STEELE'S BEDDING TYPES:

- Mile, Irene. Copper-red, bronze red and henna sheds. Lighter and brighter than Gorgeous. Some brilliant pure red tones; 1/4 oz. \$8.00..... PANS-5M. 30¢
- Golden Gate. Fine golden yellow with three dark blotches; very resistant to heat; Adonis. Light blue shades, most of which show small white face in center of bloom; marked with darker blotches..... 1/4 oz. \$5.50..... PANS-5A. 30¢
- Blend of Bedding Types. Hand made blend of above..... 1/4 oz. \$5.50..... PANS-5X. 25¢

STEELE'S SWISS GIANTS:

- Sea Blue. Intense blue with dark blotch; excellent..... PANS-6S. 30¢
 - Gorgeous Red. Reddest Pansy, with deeper blotch..... 1/4 oz. \$5.50..... PANS-6G. 30¢
 - Super Swiss 400 Mixed. 1/4 oz. \$6.00; 1 oz. \$19.00; 1/4 lb. \$60..... PANS-6X. 25¢
 - Butterfly Hybrids..... 1/16 Oz. \$3.75; 1 Oz. \$26.00..... PANS-7X. 35¢
- Pastel in character in shades of pink, rose, apricot, buff, lavender, yellow, pale gold, orange, salmon, coral and flesh, many overlaid with a delicate bronze cast. Form ruffled, fluted and marked with sun rays and blotches of butterfly sheen metallic jewel tones. Distinct strain and unlike any other Pansy. Excellent for cutting.

—Steele Pansy Blend. Blend of all above Steele varieties..... 1/4 oz. \$5.50..... PANS-8X. 03¢

PARKINSONIA. (pah-kin-SOH-ne-ah) Leguminosae.

Tropical and sub-tropical shrubs and trees with whitish or yellow racemes and flattened leathery pods. None are hardy in the North but others are native up to Texea and Arizona.

—aculeata. Tree to 30 ft; thorny; fls yellow, frag; hedge plant..... PARK-1. 25¢

PARONYCHIA. (par-oh-NIK-ee-ah) Whitlow-wort, Nail-wort. Illeceosceae.

Small herbaceous tufted annuals and perennials with small clustered flowers. They are especially nice in the rockery and easily grown.

—argentea. Prostrate; white fls in dense clusters amongst lvs; HHP.... PARON-1(C). 30¢

PASSIFLORA. (pas-i-FLOH-rah) PASSION FLOWER. Passifloraceae. G-50 d.

Mostly tendril climbing plants not hardy in the North but many are grown indoors where they make good house plants. In pots use some leaf mold in a fibrous loam and give liquid manure when in growth.

- caerulea. Fls to 4" ac; pale pink, the crown white and purple; house pl.... PASS-9. 25¢
- Columbian species. Collected n Columbia..... PASS-11. 25¢
- incarnata. White fls shading to pink with rings around fls; Va.-Tex.... PASS-17. 25¢
- mollissima. Fls rose, 3" ac; fruits yellow; from Andes..... PASS-23. 25¢

PEDICULARIS. (pe-dik-eu-LAY-ris) WOOD-BOTONY LOUSEWORT. Scrophulariaceae.

Annuals and perennials with two-lipped flowers in spiked clusters in whitish and reddish colors and used in the rockery and border.

- densiflora. Very brilliant, scarlet fls; woodland; 1 ft; Calif; HP..... PEDI-4. 25¢
- groenlandica. Red and purple fls; 18" hardy; HP..... PEDI-5. 25¢
- nepalensis..... PEDI-9. 20¢
- siphonantha. Pink fls; beautiful lvs; rockery; HP..... PEDI-12. 25¢
- Pedicularis Mixture. All kinds listed..... PEDI-X. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

THE HERB COLUMN

Continued from Last Page

round the hub for temporary use. Bulbs for the shallots and seed for the Chervil as this will not transplant. The Fancy Wheel of decorative and fragrant herbs may include the ones that were used in the long-ago Knot Gardens and thus trim nicely to conform to breadth and height. Suggested kinds: Germander, Gray and Green Santolina, Lavender, Rosemary, Dwarf Southernwood, Hyslop and Roman Wormwood. The gray and green leaved herbs should be alternated in the spaces to produce an interesting dark and light pattern. The herbs mentioned here are all biennials or perennials as they are more satisfactory in this case. However it is possible to include Green Bush or Purple Basil and Sweet Marjoram in either the culinary or decorative wheel garden.

Where winters are not severe, fall planting is preferable but for colder areas spring transplanting is recommended. It is possible, ofcourse, to start the herbs for the wheel from seeds. In most cases, these may be sown in the autumn (see list in September issue). For those willing to wait for the final effect, this is an economical way to procure plants.

SEEDS FROM ENGLISH GARDENS

Continued from Page 129

Hypericum olympicum. Eastern Europe; Shrubby habit, 9 inches high; very large deep golden yellow flowers all summer; makes a grand wall plant.

Dianthus Mixed Garden Hybrids. Seeds saved by Ingwersen from their strain of Pinks; this will produce a lovely lot of the best Pinks; suitable for the rock garden or flower beds; sun and lime.

Campanula carpatica turbinata. A form of the eastern Campanula carpatica which carries but one very large rich blue flower on each 6 to 9 inch stem; late summer; a very desirable rock garden plant.

Potentilla Warrensii. Eighteen inch stems and quantities of very large golden flowers from mid- to late-summer; easy; sun; any soil.

Hebe macrantha. (Veronica macrantha) RARE; the largest flowered of all the Hebes or Veronicas; a 12 to 15 inch stiff shrub, with pure white flowers more than an inch in diameter, carried in sheets during mid-summer; full sun and deep, good, well drained soil.

Cistus laurifolius. Southern Europe; tall shrub with sticky foliage and very large pure white cup-shaped flowers in profusion all summer; really hot, dry spot in full sun.

Centaurium scilloides. (Erythraea diffusa or Massonii) A wee cousin of the Gentians; neat half inch tufts of glossy green leaves and tubular clear pink flowers; spring and early summer; sun and cool, gritty scree soil.

Gentiana septemfida. Seed saved from a select form of the handsome, easily grown and free flowering cluster-headed Gentian; mid to late summer.

Crepis incana. Leaves shaped like those of Dandelion, but gray with fine hairs; and branching rigid stems carry large clear pink composite flowers all summer; full sun and well drained soil.

TREE & SHRUBS

Continued from Page 131

CYDONIA (sye-DOH-nee-ah) Quince
japonica50 5.00
pygmaea45 4.50

CYTISUS (SIT-iss-us)
**austricus* Pkt. 50¢ 1.80
**multiflorus* Pkt. 50¢ 1.30
**— White Gem* Pkt. 50¢ 6.00
nigricans Pkt. 50¢ 1.00
praeox alba, NE Pkt. 50¢ 6.00
purpureus Pkt. 50¢ 1.75
ratibonensis, NE Pkt. 50¢ 6.00
scoparius35 2.25
— New England seed90
**— New var. col'd hyb.* Pkt. 50¢ 3.00
**supinus, NE* Pkt. 50¢ 1.50

DAPHNE (DAFF-nee)
laureola45 4.50
mezereum, db45 4.50
— clean seed55 5.50
— rubrum75 7.50

DEUTZIA (DEWT-see-ah)
scabra (crenata)45 5.00

DIOSPYROS (dye-OSS-pihr-os)
kaki25 2.00
lotus25 2.00
virginiana25 1.50
— norther seed25 1.75
— from cultivated trees25 2.50

DISANTHUS (di-SAN-thus)
cercidifolius60 6.00

DRACAENA (dras-SEEN-ah)
draco, clean55 5.50

ELEAGNUS (el-ee-AG-nus)
augustifolia, clean25 1.75
— dried berries25 1.75
argentea30 3.00
**longipes (multiflora)*50 4.80
**umbellata*50 4.80

ENKIANTHUS (en-kee-GNTH-us)
campulatus, NE Pkt. 50¢ 3.25
— imported seed Pkt. 50¢ 1.50

ERICA (EHR-ik-ah) Heath
arborea, clean85
carnea, clean Pkt. 50¢ 3.00

ERIOBOTRYA (er-ree-oh-BOT-ree-ah)
japonica30 3.00

ERYTHEA (ehr-THEE-ah) Brahea
armata, clean45 4.25
edulis, clean35 3.50

ERYTHRINA (ehr-ith-RYE-ah)
crista-galli55 5.50

EUCALYPTUS (yew-kal-LIP-tus)
botryoides85 8.50
calophylla Pkt. 50¢ 1.30
citriodora Pkt. 50¢ 1.30
corynocalyx Pkt. 50¢ 2.50
eugenoides Pkt. 50¢ 2.00
fastigata Pkt. 50¢ 5.00
globulus, clean70 7.00
gunnii85 8.50
leucocylon Pkt. 50¢ 5.00
— rosea Pkt. 50¢ 2.00
macarthuri Pkt. 50¢ 1.75
maderi Pkt. 50¢ 2.50
pilularis Pkt. 50¢ 1.75
polyanthemus Pkt. 50¢ 2.00
resinifera, clean Pkt. 50¢ 1.75
robusta, (multiflora) Pkt. 50¢ 2.00
fostrata (camaldulensis) Pkt. 50¢ 1.25
rudis Pkt. 50¢ 1.75
sideroxylon rosea Pkt. 50¢ 2.00
tereticornis (umbellata) Pkt. 50¢ 2.00
viminalis Pkt. 50¢ 1.75

EUONYMUS (yew-ON-im-us) Spindle Tree
alatus, clean45 4.50
americanus45 4.00
atropurpureus30 3.00
europaeus25 2.00
— intermedia, bright red fruits 1.00
japonicus25 2.00
**planipus (sachalinensis)* 1.00

EXOCHORDA (ex-oh-KORD-ah) Pearl B.
grandiflora40 4.00

FAGUS (FAY-gus) Beech
grandifolia (fall only)30 3.00
sylvatica25 1.75
— atropurpurea25 3.50

FATSIA (FAT-see-ah) Aralia sieboldii
japonica 1 000 seeds \$3.00

Continued on Page 138

PENSTEMON SEED SPECIALITY

PELARGONIUM (per-ahr-GON-ne-um) STORK'S BILL. Geraniaceae.

The Geranium commonly grown in the greenhouses in the North, all tender perennials, are listed here. The genus Geranium or Cranesbills are listed under Geranium. While the florist varieties of Geraniums are grown from cuttings, many are grown from seed, especially for the pleasure of the new forms and hybrids. They are easy to grow. —zonale, Mixed. Seed saved from a large European collection..... PELA-35. 20¢

PELTOPHORUM. (pel-TO-fro-rum) (Baryxylum) Leguminosae.

Tropical ornamental trees with showy yellow flowers in terminal panicles and flattened winged pods. Suitable for the far South only.

—africanum. Rhodesian Black Wattle. Thorneless, feathery fol; sweet sc.... PELT-1. 25¢

PENNISETUM. (pen-i-SEE-tum) Ornamental Grass. Gramineae.

Annual and perennial ornamental grasses for borders or specimen planting. Used also for dried flowers. Start seed indoors early for good sized plants; they are easily grown; space plants 12-18 inches apart.

—Ruppellii. Fountain Grass. Solitary spikes, purple, red, rose; 4 ft; TP.... PENN-9. 15¢

—villosum. (longistylum) Pretty, 2 ft; spikes plume-like, purplish; TP.... PENN-11. 15¢

PENSTEMON. (pen-STEEM-on) BEARDS-TONGUE. Scrophulariaceae.

An attractive genus of perennials, nearly all of which are native N. American; in bright tubular flowers on terminal racemes or panicles. They are not hard to grow and do best in a well drained soil. They are great bloomers, sometimes causing the death of the plant.

—aggregatus. Showy; lge deep blue fls; best of clusterheads; 1 ft; HP.... PENS-4. 25¢

—albertinus. Bright blue spikes, rockery; lvs in basal rosettes; 8"; HP.... PENS-5. 25¢

—auriberbis. Neat rock pl; showy, pale lilac, golden beard; 4-8"; HP.... PENS-15. 25¢

—Barreiteae. Shrubby, rose-purple fls; 1 ft; HSH.... PENS-21. 25¢

—bicolor typicus. Yellow form; large fls; 3 ft; HP.... PENS-24. 35¢

—bicolor ssp roseus. Rare Arizona form, rose-purple fls; 1 ft; HP.... PENS-24R. 35¢

—Bridgesii. Sub-shrub; fls intense scarlet; RG; 1 ft; HP.... PENS-23. 25¢

—Canescens. Pale purple fls; for wild garden; 3 ft; HP.... PENS-28. 20¢

—Cardwellii. Fine sub-shrub; purple fls; broad ev. lvs; 1 ft; HHP.... PENS-29. 25¢

—caudatus. Glaucous blue lvs; lavender or blue fls; 1 ft; HP.... PENS-31. 25¢

—clutei. Bluish lvs; fls rose touched orange; 3 ft; HP.... PENS-33. 25¢

—comarrhenus. Showy deep blue; lovely; 18"; HP.... PENS-35. 25¢

—congestus. Dense basal rosettes of bluish lvs; blue spikes; 2 ft; HP.... PENS-37. 25¢

—cyananthus. Intense blue fls in clusters; 2 ft; HP.... PENS-44. 25¢

—dustus. Neat attractive RG plant; mats 1 ft. ac; blue fls; 8"; HP.... PENS-50. 25¢

—Digitalis. White or pinkish fls; strong grower; 5 ft; HP.... PENS-53. 25¢

—Eatonii ssp exsertus. Showy, large spikes of red fls; 4 ft; HP.... PENS-57S. 35¢

—Eatonii ssp. lancefolius. A Nevada form with narrow lvs; 4 ft; HP.... PENS-57L. 30¢

—Eatonii ssp. undosus. Downy stems, big basal lvs; red fls; 2-3 ft; HP.... PENS-57N. 35¢

—erianthera ssp. saliens. Flat rosettes; fls lge. lavender; RG; 1 ft; HP.... PENS-59. 25¢

—Fendleri. Blue flushed pink fls; dry places; RG; 1 ft; HHP.... PENS-61. 25¢

—flavescens. Neat alpine; small creamy yellow fls; easy; HP.... PENS-63. 25¢

—floridus. Showy fls spikes in rose-pink; 4 ft; HP.... PENS-64. 25¢

—fruticosus. Blue fls in June; shrubby; 2 ft; HP.... PENS-65. 25¢

—Gairdneri. Small pure blue fls; tufted plant; 10"; HP.... PENS-66. 30¢

—Garretii. Lge deep blue fl spikes; RG; 1 ft; HP.... PENS-67. 25¢

—glaber. Procumbent; fine purple-blue; very hardy; 1 ft; HP.... PENS-68. 25¢

—gloxinioides. Sensation. Showy, many colors; cutting; 2 ft; HHP.... PENS-71S. 25¢

—grandiflorus. Showy, large lavender-blue fls; 6 ft; HP.... PENS-76. 25¢

——albus. Comes 50% true; white form; 6 ft; HP.... PENS-76A. 30¢

——Lavender Form. A showy color; 5 ft; HP.... PENS-76L. 30¢

—heterophyllus. Showy Calif sp; rose-violet to intense blue; 1-5 ft; HHP.... PENS-84. 25¢

—hirsutus. Pink to purple, improved; 2 ft; HP.... PENS-85. 25¢

—Gladwyne Varieties. Mrs. Henry's strain; beautiful; nice colors.... PENS-85G. 25¢

—Jamesii. Alpine, neat, clumps; fls soft blue-lavender; 1 ft; HP.... PENS-92. 25¢

—laevigatus. Pale lavender fls; 3 ft; HP.... PENS-95. 25¢

—leiophyllus. Rare, fls pure deep blue; easy; 3 ft; HP.... PENS-96. 35¢

—lentus. Pretty; spikes of rare blue shade; somewhat alpine.... PENS-97. 35¢

—microphyllus. Shrub; bright yellow fls; 4 ft; HP.... PENS-104. 30¢

—neomexicanus. Long spikes of bell-shaped blue fls; 2 ft; HHP.... PENS-111. 25¢

—Palmeri. Very showy, very large white flushed pink fls; 3 ft; HHP.... PENS-120. 25¢

——White Form. Pure white fls.... PENS-120W. 25¢

—eglandulosus. Broader type and thinner stems; smaller capsules.... PENS-120E. 35¢

—platyphyllus. Sub-sh; showy spikes of blue fls; RG; 1 ft; HP.... PENS-128. 25¢

—procerus. Native Mont. sp., blue fls June-July; 1 ft; HP.... PENS-129. 25¢

—pseudospectabilis ssp. connatifolus. Showy; various colors; 1 ft; HP.... PENS-131. 25¢

—Rattani minor. Lavender fls; smaller than species; 18"; HP.... PENS-134M. 25¢

—Richardsonii. Easy; pink to rose-lilac fls; good for beginner; 2 ft; HP.... PENS-135. 25¢

—rubicundus. Attractive; lovely rose fls; stands some shade; 4 ft; HP.... PENS-137. 30¢

—Scouleri. Shrub; white fls; 1½ ft; HP.... PENS-142. 25¢

—secundiflorus. Showy; large lavender fls; 2 ft; HP.... PENS-143. 25¢

—sepalalus. Sub-sh; large inflated violet fls; very showy; 3 ft; HP.... PENS-144. 35¢

—Six Hills Variety. Small shrubby plant; rosy purple fls; 4 ft; HP.... PENS-145. 25¢

—speciosus. Very showy, large blue fls, very good; 2 ft; HHP.... PENS-147. 25¢

—strictus. Very showy; densely packed spk deep blue fls; 1½ ft; HP.... PENS-149. 25¢

—subglaber. Showy deep blue fls; long spikes; 1½ ft; HP.... PENS-150. 25¢

—triflorus. Bright rose-purple fls; bell-shaped; very nice; HP.... PENS-159. 40¢

—triphyllus ssp. diphyllus. Rich blue-purple attractive; RG; 1 ft; HP.... PENS-160. 30¢

—Watsonii. Light to deep blue fls in profusion; 1½ ft; HP.... PENS-170. 25¢

—Whippleanus. Lvs in rosettes; fls purple to lavender; 1½ ft; HP.... PENS-171. 25¢

—Wilcoxii. Clear blue fls in open panicles; 4 ft; HP.... PENS-174. 25¢

—Penstemon Blend. Probably more species here than any other blend.... PENS-X. 25¢

PEPPER, ORNAMENTAL: see *Capsicum frutescens*. Many can be grown as pot plants.

PETROCALLIS. (pet-oh-KAL-liss) Cruciferae.

Annuals and perennials, a few subshrubs of the Med. regions and much like Scabiosa.

—parnassii. Purplish-pink composite-like heads; 1 in ac; 4 in; HHP.... PTERC-3(C). 30¢

PLYTEUMA. (fye-TEU-mah) HORNED-RAMPION. Campanulaceae.

Perennials grown mostly in the rockery, the taller ones in the border. They are of easy culture.

—spicatum. Blue flowers.... PHYT-20(C). 30¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

PERILLA - PIERIS - POTENTILLA

NOTE: It is our intention that these seed lists be correct, both as to classification and to descriptions. We use Hortus II as our authority. If any of our readers note a mistake, we will certainly deem it a favor if it is pointed out to us.

PERILLA. (pe-RIL-ah) Labiatae.

Half hardy annuals valued for their highly colored foliage and used in bedding for sub-tropical effect. Thrive in light sandy soils; start seed in March in gentle heat.

- frutescens crispata*. Fol. in many colors much like Coleus; 4 ft; TA..... PERI-1. 15¢
- lacinata*. Pretty lacinated foliage..... PERI-1L. 20¢

PHACELIA. (fa-SEE-li-ah) Hydrophyllaceae.

Hardy annuals and perennials with flowers in lavender to blue, in clusters or racemes; very pretty in mass plantings. Start early indoors or plant later where the plants are to grow. The perennials can be started as late as August.

- campanularia*. Brilliant deep blue fls; dry soil; sun; 9"; RG; HHA..... PHAC-2. 15¢
- leucophylla*. Spikes of white or pink fls; showy RG; 1 ft; HP..... PHAC-7. 20¢
- tanacetifolia*. Bee food; Blue fls especially grown for bees; sow in April; HA..... PHAC-15. 15¢
- Whitlavia*. Calif. Bluebells. Blue, bell-shaped fls; 1½ ft; HA..... PHAC-17. 15¢
- Phacelia Blend*. All kinds mixed..... PHAC-X. 15¢

PHLOGACANTHUS. (flo-ga-CAN-thus) Acanthaceae.

Somewhat shrubby plants with spikes of attractive flowers, related to Acanthus. Best grown in the greenhouse in warm, damp atmosphere and rich soil.

- tryrsiflorus*. Moderate sized shrub..... PHLK-1. 25¢

PHLOMIS. (FLOH-nus) Labiatae.

Perennial plants suitable for the border and wild garden. They are rather coarse in growth and should be in the back ground plantings. Easily grown from seed.

- Purple*. Showy, easy, vivid purple fls; whorl above whorl; 4 ft; HP..... PHLO-1. 15¢

PHYSALIS. FIS-a-lis) HUSK TOMATO, GROUND CHERRY. Solanaceae.

Easily grown, starting indoors or planting direct to the soil, much like tomatoes.

- Alkekengi*. Chinese Lantern Plant (Francheti) For its red pods; 2'; HA PSAL-1. 15¢

PHYSTOSTEGIA. (fy-soh-STEE-ji-ah) FALSE DRAGONHEAD. Labiatae.

Hardy perennials thriving best in a cool moist place with some shade. Beautiful in the border or for cutting.

- virginiana*. Fls in spikes, in purplish red to rose-pink; 4 ft; HP..... PHOS-4. 15¢
- Rose-lilac*. Strain in the one color..... PHOS-4R. 20¢

PIERIS. (py-ER-is) Ericaceae.

Evergreen shrubs and small trees native of the N. Am. and Asia. Best in sheltered positions, some in the greenhouse; moist sandy loam with peat or leaf mold best; partial shade suits them.

- floribunda*. Pretty small ev. sh; short spikes, white bells; to 6 ft; HSh..... PIER-1. 25¢
- formosa*. Small tree; fls white or pink, drooping panicles; to 20 ft; HSh..... PIER-2. 25¢
- japonica*. Nice large shrub to 20 ft; fls white; urn-shape, clusters; HSh..... PIER-3. 25¢
- ovatifolia*. Semi-evergreen to 40 ft; sprays of white bells; HSh..... PIER-4. 25¢
- taiwanensis*. Compact evergreen; fls long nodding white; 8 ft; TSh..... PIER-6. 35¢
- Pieris Blend*. All species mixed..... PIER-X. 20¢

PLATYCODON. (plat-e-KOH-don) BALLOON FLOWER Campanulaceae.

One showy perennial species, thriving in loamy soils, in full sun, blooming 2nd year.

- grandiflorum* Mixed. White and blue fls; very beautiful; 2½ ft; HP..... PLTY-1. 20¢

PLUMBAGO. (plum-BAY-go) LEADWORT. Plumbaginaceae.

Shrubby plants, not hardy in the North. The flowers are in terminal spikes.

- zayheri*. Rare S. Rhodesian sh; pure white fls; drought resistant..... PLUM-5. 25¢

POLEMONIUM. (pol-ee-MOH-ne-um) Polemoniaceae.

Perennials grown in the border; easily grown in rich loam, best from seeds sown in the fall. Flowers in blue, purplish white or yellowish, often nodding, in terminal corymbs.

- caeruleum*. Fern-like lvs; gorgeous sky blue fls; 3 ft; HP..... POLE-4. 15¢
- album*. Pure white form..... POLE-4A. 20¢
- carneum*. Rich pink trumpets; RG; partial shade; 1½ ft; HP..... POLE-6. 25¢
- Haydenii*. Blue or white fls, May-June; RG; 1 ft; HP..... POLE-16. 20¢
- occidentale*. Native bog species; blue or violet fls; 1½ ft; HP..... POLE-21. 25¢
- pulcherrimum*. Easy and pretty; pale blue fls; fine RG; 1 ft; HP..... POLE-25. 25¢
- Richardsonii*. Blue to purplish fls ½ inch ac; 9" tall; HP..... POLE-27. 20¢
- Polemonium Blend*. All species mixed..... POLE-X. 20¢

POTENTILLA. (poh-ten-TIL-ah) CINQUEFOIL Rosaceae.

A very large genus of plants or sub-shrubs, most of which are hardy in the North. They are especially good in the border or rocky; sandy soils; The flowers are in yellow, white or red, solitary or terminal cymes.

- argyophylla*. Sprays of showy yellow fls 1" ac; RG; 15 in; HP..... POTL-12. 25¢
- atrosanguinea*. Silver lvs; deep crimson fls ½ in. ac; 18 in; HP..... POTL-12A(W). 30¢
- atrosanguinea*. Red or purple fls; similar to Potl-12; 9"; HP..... POTL-13. 25¢
- fragiformis*. Golden yellow fls 1" ac; 8 in; HP..... POTL-49. 25¢
- fruticosa*. One of the best sh for RG; yellow rose-like fls; to 3 ft; HP..... POTL-52. 35¢
- fulgens*. Silvery lv. trailer; salmon-rose fls; 15"; HP..... POTL-53. 25¢
- Gibsonii* Mixed. White, carmine, scarlet; 18"; HP..... POTL-56X. 20¢
- macrantha*: see *Hebe macrantha*.
- nepalensis hybrids*. Rose and rosy crimson; 2 ft; HP..... POTL-84. 20¢
- nitida*. Rose fl. 1" ac; mat-forming; 1 in; RG; Alps; HP..... POTL-86(C). 30¢
- recta v. Warrensii*. Masses of golden fls; very nice; 18"; HP..... POTL-106. 20¢
- Warrensii*: see *Potentilla recta*..... POTL-106(W). 30¢
- Potentilla Blend*. All kinds mixed..... POTL-X. 20¢

The listing of all flower seeds, runs from the As to the Zs and as often as possible, but so as not to crowd other reading matter out. The listings can be considered all available as long as the listing has not been passed in the following listing.

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Germinating Flower Seed

By Dr. C. R. Worth

Fall sowing should be delayed until the last possible moment unless it is definitely known that the seed will not germinate within a few weeks, or unless greenhouse facilities are available. Very few plants, other than weeds, can survive a severe freeze unless they have developed considerably beyond the cotyledon stage. Sowings at this time may be made in carefully prepared beds in the open, yet there is considerable danger or loss, as some seedlings will appear with the first warm days of spring, and a late cold spell may destroy them entirely. If the seeds are at all rare, they should be sown in a frame so that protection during spring cold snaps is possible.

Fall Sowing Necessary

Fall sowing seems almost necessary for satisfactory germination of a few things, particularly Helleborus and Lilium candidum; it is also advisable for species of the Buttercup Family, especially Anemone and seeds of trees and shrubs. Penstemons will probably germinate better from fall sowing, yet results from early sowing have shown that most species do not require the long spell usually assumed to be necessary.

Winter sowing, that is, during the months when the ground is frozen, need be resorted to only in the case of late arrival of a few kinds of seed that should have been sown in the fall. It will probably be necessary to sow these seeds in pots or flats, after which they should be set in the open, or in a cold shed, for the remainder of the winter.

Early Spring Sowing

Very early spring, that is, the first mild days, seems to be the best time for sowing seed of most hardy perennials, and especially of alpine. Here, where at least occasional freezes, and an occasional snow, can be expected into early May, one should make the most sowings during the last two weeks of March. All sowings at this time are made in pots or flats, or in a cold frame if available; open ground sowings before the middle of April have rarely been successful. For a milder climate than that of central New York or Michigan, the dates may be advanced considerably. The idea is to assure the seeds of at least a month of cool weather before germination is desired. Most rock garden plants require at least this brief cold treatment, and few seem to object to it. Crucifers, composites, Geraniums and Erodiums are as well off, at least, if not sown until several weeks later, when mild weather can be expected. Primula auricula and Sempervivum will not germinate well without this brief cold treatment, and late sowings of these two will not come up till the following spring.

Effect of Cold on Seed

Winter covering of seed pans with snow seems rather ineffective. Many hours have been spent shoveling snow over pots that had been sown in the fall, or had failed to germinate the previous spring, without seeing appreciable improvement in germination. On the other hand, if the seed beds or pots are exposed to late spring snow flurries, seed will germinate as if by magic almost as soon as the snow melts. Better results have been obtained where the frames were covered by hotbed sash as soon as the snow had stopped falling.

Freezing of seeds in the refrigerator (some gardeners freeze them into the center of ice cubes) is an alternative treatment that gives good results. At present too little is known of the proper time the seeds

Continued on Page 139

IRIS

By Walter Welch, Indiana

To the ordinary gardener raising flowers and watching them bloom, is a routine matter, varying little from season to season, except for occasionally adding some new variety. But to me, gardening is a series of adventures, exploration and experimentation, exciting and interesting beyond the more repetition of former seasons.

One of these incidents occurred when a lady from Iowa wrote me about a tiny Dwarf Iris which she found in the Lincoln Cemetery of Oskaloosa, Iowa.

The report which she gave states that some early pioneers on their way westward passing through this area, had the misfortune of losing a baby girl and that it was buried upon the spot. Before proceeding on their journey they placed a plant of this tiny Iris to mark the spot, much after the fashion of the Mohammedans who placed the white Iris Albicans on their graves all over the world. This was in the year 1855 and this plant has survived to this day, almost a hundred years.

A cemetery grew around this simple grave, and eventually the name of the family was forgotten but the tiny Iris continued to grow and spread, though it is reported that every year the caretaker mows over the spot, the Iris receiving no care. It now covers an area of about five feet in diameter, blooms abundantly every spring and is apparently healthy.

Naturally, I asked my correspondant to procure a plant of it and ship it to me for identification. It is now growing in the Dwarf Iris Test Gardens here at Middlebury and I am looking forward with pleasure to seeing it in bloom.

Identification of this plant will not be easy and perhaps impossible, as I have no record of any Dwarf Iris variety that old. At first thought one would suppose it to be the old grandmother's favorite, *Atrorivola*, but this variety is recorded as being collected in 1856 by Todaro, an Italian botanist.

Regardless of the identity of this Iris, it will have much of value in many ways. In spite of its probable faults, it will have a sentimental value by association with this incident, and sentiment in gardening is important. It is an example of what sort of Iris our forefathers loved and cultivated, and a yardstick to observe the improvements that have come since that early period. Certainly its stamina is something to cause many of our modern glamorous varieties to blush with shame.

Yes, there are numerous opportunities for adventure and excitement in gardening, for the person with sentiment and imagination.

TREE SEEDS

Continued from Page 129

LARIX DECIDUA (European Larch) Austria grown seed.....	\$5.00 lb.
LARIX LEPTOLEPSIS (Japanese Larch) Japan grown seed.....	\$5.00 lb.
PICEA CANADENSIS ALBA (White Spruce) Wisconsin grown seed.....	\$17.00 lb.
PICEA DENSATA GLAUCA (Black Hill Spruce) So. Dak. grown.....	\$17.00 lb.
PICEA ABIES (Norway Spruce) Austrian grown seed.....	\$4.00 lb.

Continued on Page 140

POPPIES TO SOW IN THE FALL

POPPY. PAPAVER (pa-PAY-ver) Papaveraceae.

Common name for the genus *Papaver* (pap-PAY-ver). These beautiful flowers come in both annuals and perennials, in a good color range, and flowers that are really gorgeous. Easily grown from either late fall or early spring sown seeds, where plants are to grow. The annuals especially resent transplanting.

—**alpinum**. Alpine P. Nearly stemless; white or yellow fls; 10"; HP..... **POPPY-2**. 25¢
 —**bracteatum**. Blood-red fls; hairy; 3 ft; HP..... **POPPY-10**. 15¢
 —**cardinale fl. pl.** Cardinal P. Double, red fls; HA..... **POPPY-12**. 15¢
 —**lateriteum**. Broad petalled brick-red fls; hairy; 2 ft; HP..... **POPPY-22**. 25¢

P. ORIENTALE: Hardy perennials with huge flowers in varied color range. The seed does not come entirely true but the varied colors resulting from good seed, is very interesting. Seedlings have a more robust growth than the vegetatively increased plants.

—**Beauty of Livermore**. Reselected huge crimsons..... **POPPY-30L**. 15¢
 —**Brilliant**. Bright fiery red..... **POPPY-30B**. 15¢
 —**Victoria**. Beautiful salmon-pink with black blotch..... **POPPY-30V**. 15¢
 —**Mixed**. All P. orientale varieties mixed..... **POPPY-30X**. 15¢

P. NUDICAULE: Iceland P. Perennials to 1 ft. tall and blooming first year from seed, rarely lasting over 3 years, but they reseed. They flower from April to June and are charming in mass plantings in the border.

—**amurense**. Showy butter-cup fls; fl stems to 2 ft; HP..... **POPPY-28A**. 15¢
 —**Coonara Pink**. Gorgeous rose tints, soft pink to deep rose 18"; HP..... **POPPY-28C**. 15¢
 —**El Monte**. A new beautiful deep tangerine-orange, fringed; HP..... **POPPY-28E**. 15¢
 —**Imperial Jewels**. A new strong stemmed strain in gorgeous colors; HP..... **POPPY-28J**. 15¢
 —**Garford Giants**. Crinkly petals, ideal cut fl if cut in bud; 2-3 ft..... **POPPY-28F**. 15¢
 —**Gibson Giants**. Lovely orange, huge flowers..... **POPPY-28G**. 20¢
 —**Kelmscott Strain**. Huge fls 3" ac; very pretty colors; 2-3 ft..... **POPPY-28K**. 20¢
 —**Sanford's Giants**. Immense fls on stiff stems; varied color range..... **POPPY-28S**. 15¢
 —**The Empress**. Huge salmon-rose and pink fls..... **POPPY-28M**. 15¢
 —**Iceland Poppies Mixed**. A truly gorgeous blend..... ½ oz. 40¢ **POPPY-28X**. 15¢

P. Rheas: Shirley Poppy. They have been highly improved and come in many colors with crinkly petals. Sow late in the fall in the South. Hardy annuals to 3 ft. tall.

—**American Legion**. Dazzling orange-scarlet with black mark..... **POPPY-38A**. 15¢
 —**Cavalcade**. Double Begonia-fl; rich orange-scarlet; huge; 2 ft..... **POPPY-38C**. 15¢
 —**Dazzler**. Double orange-scarlet; beautiful..... **POPPY-38D**. 15¢
 —**Gaiety**. White with pink edge, showy and dainty..... **POPPY-38G**. 15¢
 —**Ryburgh Hybrids**. Do Anemone-fl satiny shades of white, pink, rose..... **POPPY-38H**. 15¢
 —**Orange King**. Beautiful deep orange..... **POPPY-38K**. 15¢
 —**Rev. Wilk's Strain**. Single fls in beautiful colors..... **POPPY-38W**. 15¢
 —**Salmon Shades**. Very pretty..... **POPPY-38S**. 15¢
 —**Sweet Briar**. Double Begonia-fl, pretty wild rose pink..... **POPPY-38B**. 15¢
 —**Shirley Poppy Blend**. All colors and types mixed..... ½ oz. 25¢ **POPPY-38X**. 15¢
 —**Double Shirley Blend**. Double varieties only..... **POPPY-38DX**. 15¢

P. POLYGALA (poh-LIG-ah-lah) MILKWORT. Polygalaceae.

Most are tender annuals and perennials; grown under glass in N. Plant in light soil. and partial shade. A few are natives of N. America.

—**apopetala**. Lge pink fls ½" ac; 10 ft. in Cal; Sh..... **POLG-4**. 25¢

POLYGONUM (poh-LIG-oh-num) KNOT-WEED, FLEESE FLOWER. Polygonaceae.

A large genus of annual and perennial greenhouse and hardy plants, variable in habits. Easy to grow; plant annuals in open ground early.

—**amplexicaule**. Pretty; spikes of small rose-pink, white fls; 3-4 ft; HP..... **POLY-4**. 25¢
 —**emodi**..... **POLY-11**. 20¢
 —**orientale, Rubin**. Interesting cut fl or border plant; red fls; 1½ ft; HA..... **POLY-15**. 15¢
 —**macrophyllum**..... **POLY-12**. 15¢
 —**mollis**. Sh'by; panicles of white fls; will grow in moist places; 3 ft HB..... **POLY-13**. 25¢
 —**Polygonum Mixture**. All species mixed..... **POLY-X**. 15¢

POLYPTERIS (pol-LIP-ter-iss) OTHAKE. Compositae.

Erect plants with rose-purple or flesh colored, radiate heads in loose panicles.

—**Hookeriana**. Fl heads 1" ac; rays rose-red; pretty cut flower..... **POLP-1**. 15¢

PORTULACA (port-yew-LAY-kuh) MOSS ROSE, PURSLANE. Portulacaceae.

Perennials but usually treated as hardy annuals in the North. They are low growing fleshy stemmed plants having brilliant large showy flowers in many bright colors. They are sun loving plants and do fine in the hottest spots, where other flowers would die. Sow seeds in April, where they are to grow; 2-3 inches tall. They make pretty beds.

—**grandiflorum fl. pl.** Moss Rose. Double fl form; rose, red, yellow, white **PORT-IDX**. 20¢
 —**Single Mixed**. Showy single fls; large petals..... **PORT-15X**. 15¢
 —**Single Jewels**. Bright glistening wide open fls; beautiful strain..... **PORT-1J**. 15¢
 —**Portulaca Blend**. All kinds mixed..... **PORT-1X**. 15¢

PRIMULA (PRIM-u-la) PRIMROSE. Primulaceae.

A very large genus, mostly low growing with flower parts always in 5s. They are varied as to types, uses and character. All require a rich deep moist soil, with coolness and some shade. Sow seeds either in late fall or early spring and early summer.

—**Auricula**. Many colors 1" ac; umbels; 8 in.; HP..... **PRIM-10**. 25¢
 —**Bulleyana**. Deep yellow fls 1" ac; whorls; 2½ ft; HP..... **PRIM-15**. 35¢
 —**burmanica**. Reddish purple fls with orange eye, ½" ac; 2 ft; TP..... **PRIM-16**. 25¢
 —**candelabara Hybrids**. Deep rich colors, purple, crimson to yellow; HP..... **PRIM-18**. 35¢
 —**cashmiriana**: see denticulata.

—**Cockburniana**. Orange fls 1" ac; umbels; summer; 1½ ft; HP..... **PRIM-28**. 35¢
 —**denticulata**. Dense heads of violet fls, early spring; 10"; HP..... **PRIM-40**. 20¢
 —**cashmiriana**. More farinose, rich purple fls with yellow centers; HP..... **PRIM-40C**. 35¢
 —**Rubin**. Deep ruby color..... **PRIM-40R**. 35¢
 —**elator v. aurantiaca**. Orange-red fls; 8 in.; HP..... **PRIM-45A(C)**. 30¢
 —**Florindae**. Sulphur-yellow fls, drooping, in terminal umbels; 4 ft; HP..... **PRIM-56**. 35¢
 —**glancescens v. calycina**. More robust, larger fls; rose to pur; 5"; HP..... **PRIM-63(C)**. 30¢
 —**Mixed**. Many kinds of this pretty species..... **PRIM-85X**. 25¢
 —**japonica Etal Hybrids**. Choice selection of hybrids..... **PRIM-85E**. 35¢
 —**Postford White**. By far the best white in the species..... **PRIM-85W**. 35¢
 —**kewensis**. Bright yellow fragrant fls; umbels; grow under glass; TP..... **PRIM-89**. 35¢
 —**Kingii**. ¾" scarlet fls; umbels; 8" inches; HP..... **PRIM-90**. 35¢
 —**pulverulenta**. 1" fls, purple with orange-brown eye; umbels; 8 in.; HP..... **PRIM-131**. 40¢
 —**rosea splendens**. Red fls in loose heads: Himalayas; 8 in.; HP..... **PRIM-134S(C)**. 30¢
 —**secundiflora**. Deep violet fls, one sided umbels; 8"; China; HP..... **PRIM-144**. 40¢
 —**vulgaris v. corrulea**. (acaulis) Dark blue 1½ in. ac; 6 in.; HP..... **PRIM-173C(C)**. 30¢
 —**v. alba**. White form; 6 inches; HP..... **PRIM-173A(C)**. 30¢
 —**Hardy Primula Blend**. All species hardy up to Michigan..... **PRIM-X**. 30¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

QUAMOCLIT - ROMULEA - ROSE

The listing of all flower seeds, runs from the As to the Zs and as often as possible, but so as not to crowd other reading matter out. The listings can be considered all available as long as the listing has not been passed in the following listing.

PROBOSCIDEA. (pro-bo-SID-e-ah) UNICORN PLANT. Martyniaceae.

Annual and perennial plants with large, long stemmed leaves, large purple flowers and Okra-like fruits that can be used the same as Cucumbers. Sow seeds where plants are to grow but in the North start them indoors early.

—Jussieu. Fls creamy white toiolet, 3 ft across; TA..... **PROB-2. 15¢**

PTEROCEPHALUS. (tehr-oh-SEFF-al-us) Dipsaceae.

Draba-like perennials, grown in the rockery. They are native of the Pyrenees; 2-3" high; mat-like growth.

—pyrenarica. Lvs in rosettes; fls lilac; 2-3"; HP..... **PETOC-1(C). 30¢**

PURSHIA. (PURSH-e-ah) (Kunzia) ANTELOPE-BUSH. Rosaceae.

Western native bushes with small yellowish flowers, probably best for its clustered leaves. It grows in arid lands from Ore. to Calif.

—tridentata. Deciduous, to 6 ft; silvery leaves; hardy to Mich..... **PURS-1. 25¢**

QUAMOCLIT. (KWAM-oh-klit) STAR GLORY. Convolvulaceae.

Annual and perennial twining vines, treated as tender annuals in the North. They are used mainly for rapid growing climbers, thriving in a good light soil and in full sun.

—lobata. Crimson fls fading to pale yellow; grows to 20 ft; TP..... **QUAM-2. 20¢**

—pennata. Cypress Vine. Showy scarlet fls; to 20 ft; TA..... **QUAM-4. 20¢**

—White. A pretty white flowered form..... **QUAM-4W. 20¢**

—Pink. A pink colored variety..... **QUAM-4P. 20¢**

—Mixed. Mixed varieties of Q. pennata..... **QUAM-4X. 15¢**

—Sloteri. Cardinal Climber. Red fls, white throat, 2" long to 20 ft; TA..... **QUAM-6. 20¢**

—Quamoclit Mixture. All species mixed..... **QUAM-X.....15¢**

RAMONDA. (ray-MOND-ah) Gesneriaceae.

Small plants making flat rosettes of hairy basal leaves, stems 3-4 inches long bearing several 4-5 pointed flat flowers, resembling Saintpaulia, to which family it belongs. Fully hardy with protection; seedlings develop slowly.

—Nathaliae. Lavender-blue with golden center; Serbia; HHP..... **RAMO-5(C). 50¢**

—Myconii. Purple fls; 1 in. ac; 3 in; Pyrenees; HHP..... **RAMO-7(C). 50¢**

—pyrenarica. Reclassified as R. Mmconii, which see.

RANUNCULUS. (rah-NUN-keu-lus) BUTTERCUP, CROWFOOT. Ranunculaceae.

A very large genus and popular in flower gardens; those grown mainly as greenhouse plants belong to R. asiaticus. They are generally perennial and easily grown from seed, in well drained soil and sunny positions. Some of the low growing species are ideal rockery plants.

—aconitifolius. White fls 1 in. ac; 3 ft; HP..... **RAN-2(C). 30¢**

—hirtellus. Variable species, fls 2" yellow, white or pale rose; HP..... **RAN-30. 25¢**

—Camelia-flowered..... **RAN-31C. 20¢**

—Hybrid, French Giants..... **RAN-31F. 20¢**

—Mixed Hybrids..... **RAN-31X. 20¢**

—lindleyi..... **RAN-34. 20¢**

—superbus. Shades pink, white, red, yellow, rose; 35 d.to germ; HP..... **RAN-67. 20¢**

—Ranunculus Mixture. All mixed..... **RAN-X. 20¢**

RHEUM. (REE-um) RHUBARB. Polygonaceae.

Perennials with stout basal leaves and with the flowers in clusters or racemes at top of long stems. There are many species of which the common Rhubarb is one. Used mainly for bold effect in the border.

—acuminatum. Stems and fls dark purple; 2-3 ft; HP; Himalayas..... **RHEM-1. 25¢**

—nobile. Densely covered with yellowish bracts; striking; 4 ft; HHP..... **RHEM-8. 25¢**

—Rhaponticum. Pie Plant. Listed in with the herbs.

—Rheum Blend. All kinds mixed..... **RHEM-X. 20¢**

RHODOHYPOXIS. (ray-doh-hy-POX-is) Amaryllidaceae.

Pretty little bulbous plants from S. Africa and very rare in cultivation. They make a dense turf of short grassy leaves, with flat 6-pointed stars, 3/4 inch across. Like moist but well drained sandy soil, half shade and stand down to 20 degrees F. Winter bulbs over in a cool cellar; they should not be allowed to dry out.

—baurii. Brilliant rose or white fls; good pot plant..... **RHOX-1. 60¢**

RICINUS. (RIS-in-us) CASTER BEAN. Euphorbiaceae.

(G 15 days)

Single species, variable and distributed over the tropical regions. In gardens they are planted for their foliage effect. They grow as high as 20 feet and give a sub-tropical effect in the border or in center of beds. Start seed indoors early or they can be planted where plants are to grow; treat them as tender annuals.

R. communis:

—borboniensis arboreus. Red stems, glaucous foliage; 10 ft..... **RIC-1B. 20¢**

—cambodgensis. Dark foliage and blackish purple stems; 10 ft..... **RIC-1C. 20¢**

—Gibsonii. Dark foliage with metallic luster; dwarf form; 8 ft..... **RIC-1G. 20¢**

—Red Spire. Showy red stemmed variety; 10-15 ft..... **RIC-1R. 20¢**

—sanguineus. Red leaves; 10 ft..... **RIC-1S. 20¢**

—zanzibarensis. Bright green leaves with white veins; 15 ft..... **RIC-1Z. 20¢**

—viridis. More dwarf; green foliage; 10 ft..... **RIC-ZV. 20¢**

—Ricin Mixture. All varieties mixed..... 1/4 lb. 60¢; Oz. 25¢..... **RIC-X. 20¢**

ROMULEA. (ro-mu-LE-ah) Iridaceae.

Crocus-like bulbs in purple, lilac and yellow and closely related to the Crocus, but not real hardy; they are not common in the U. S.

—bulbicodium. Pale lilac, yellow centers, tinted golden brown..... **ROMU-1. 25¢**

—Hartungii. From S. Africa..... **ROMU-2. 25¢**

ROSE. Genus Rosa. Rosaceae.

The seed of species of Roses should be planted in the fall so that they can lay over winter, in the soil when they usually germinate all right the next spring. The seed bed should be so arranged that it can remain the second spring, for it is not unusual for some seed to even germinate the second spring.

—highdownensis. Crimson fls; bright fruits; a hybrid; HP..... **ROSE-68. 25¢**

—multiflora. White fragrant fls; semi-climber; 8 ft; HP; China..... **ROSE-106. 25¢**

—pendulina. Rose fls; incorymb; 3 ft; HP; Europe..... **ROSE-118. 25¢**

—setigera. Prairie R. Cl. to 15 ft; Pale rose fls; HP..... **ROSE-134. 25¢**

—Rose Mixture. All species..... **ROSE-X. 25¢**

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Zantedeschia or the Calla Lily

Callas are one of the best of flowering bulbs, for the pot or garden. The foliage is bright fresh green, some varieties having pretty white markings on the leaves and all the varieties grow easily and quite fast.

I have grown the following varieties: Rehmannii, pink; Elliotinnia, yellow; and Albo-maculata, white; this last named white has much the same leaves as the yellow, only that the leaves are a little longer, and more narrow.

I have also tried the New White Giant, and while this one grows much larger and stronger, it takes longer to start blooming and so an early fall frost may kill the flowers before they have time to develop.

This variety has all green leaves, a root like the parsnip, while the others have a large flat bulb.

This New White Giant, is best planted in a large pot or can, and so can be started early in the spring and then put outside when warm days come. In the fall it is easy to take inside when in danger of an early frost.

All of these bulbs are easy to keep over winter, and can be stored in a cool basement, where the air can circulate over them. They can stand a cool place and I try to keep mine from too warm or too cold a place, say about 50 degrees Far., in good dry air and find them fresh and solid in the spring.

Bulbs can be planted in full sun, top of the bulbs about an inch under the soil; this seems to work out very well. As they like moist soil, keep them watered in dry weather; I irrigate them by laying a hose in between the rows, so the water gets direct to the roots.

Use care in weeding and cultivating, as they have a large root system, and many of the roots are near the surface so do not work too near growing plants with the hoe or cultivator.

A good soil, a bit on the sandy side, with plenty of humas will make them grow fast and strong. I do not use any fertilizer but they could take some, if not too strong.

In digging the Callas, be very careful again, as the fresh bulbs are very tender; leave them in the garden till after the first light frost, then cut off the tops about 6 inches above the bulbs, using a shovel and raise the whole clump, then carefully remove the soil, if jarred by the shovel or otherwise, bulbs will often split open and will then easily mold or rot, if not dried in the open air. After bulbs are cleaned, lay them in a flat and keep them in a dry shady place for several days to a week and all roots and tops will then come off easily and thus you will have clean bulbs for storage.

I store them in flats 12 by 18 inches with screen bottoms, so the air will circulate up through the flats; these screen flats are placed on racks in the basement where the bulbs will get air and keep cool and dry till spring or can be taken up in the winter for potting.

When warm days come in April, take up the bulbs and separate the larger clumps, cutting with a sharpe knife, then lay with cut upwards to dry and in a few weeks they will be ready to plant out in the garden. If you wish to start a bulb in the winter, use a large pot, according to the size of the bulb, and use a good fresh soil, with some sand to keep it light and loose; place the bulb just below the surface and dampen,

Continued on Page 140

TREE AND SHRUB SEEDS

Continued from Page 134

FEIJOA (fay-JOH-ah)		
sellowiana	1,000 seeds \$3.00	
FIRMIANA (fir-me-AH-na)		
simplex	.30	3.00
FRAXINUS (FRAX-in-us) Ash		
americana	.25	1.70
excelsior	.25	1.25
lanceolata	.25	1.70
ornus	.25	1.75
GARDENIA (gar-DEEN-ee-ah)		
florida (jasminoides)	.65	6.50
GENISTA (jen-NIST-ah) Broom		
aetnensis	.80	
canariensis	.85	
fragrans	1.25	
germanica	1.25	
monosperma	.70	
pilosa	1.00	
radiata	1.00	
tinctoria	1.00	
GINKGO (GINK-goh) Maiden-hair Tree		
biloba	.35	1.60
— New England seed	.25	2.50
GLEDITSIA (gled-DIT-see-ah) H. Locust		
sinensis	.30	3.00
triacanthos	.25	1.50
— inermis	.25	1.75
GREVILLEA (gre-VILL-ee-ah)		
robusta	1.10	9.00
GYMNOCLADUS (jim-NOK-lad-us)		
dioicus	.25	1.00
HALESIA (hay-LEE-zee-ah)		
monticola	.35	3.25
tetraptera	.25	2.25
HAMAMELIS (ham-am-MEEL-iss)		
japonica	.65	6.00
HIBISCUS (hye-BISK-us) Rose Mallow		
*paramutabilis	2.50	
*sino-syriacus	2.50	
syriacus	.25	2.00
— White flowered	3.00	
HICORIA (hi-KOR-ee-ah) Hickory		
glabra	.75	
laciniosa	.75	
ovata	.75	
pecan, Northern naturals	1.50	
— large fruited paper-shells	1.75	
HIPPOPHAE (hip-POFF-uh-ee)		
ramnoides	.30	2.75
IDESIA (eye-DEE-see-ah)		
polycarpa	.45	4.50
ILEX (EYE-lex) Holly		
aquifolium, clean	.25	2.00
— from garden varieties	.35	3.25
crenata, clean	.35	3.25
glabra, db	.25	2.25
opaca, lcan	.55	5.50
— from northern range, clean	.65	6.50
verticillata, clean	.60	5.75
INDIGOFFRA (in-dig-GOFF-er-ah) Indigo		
dosua	1.60	
JJUBAEA (ju-BAY-ee)		
spectabilis	100 seeds \$1.25	
JUGLANS (JOO-glanz) Walnut		
californica	.85	
— hindsii	.95	
cinerea, NE	.60	
nigra, from wild trees	.65	
— orchard var; Ohio-Stabler-etc	1.00	
sieboldiana	1.50	
— cordiformis	2.00	
JUNIPERUS (joo-NIP-er-us) JUNIPER		
chinensis, clean seed	.50	5.00
communis depressa, NE; db	.35	3.25
— clean seed	.60	5.50
— upright columnar type, clean	.35	3.25
— montana (siberica) clean	.60	5.75
japonica, clean	.60	5.50
monosperma, db	.35	3.25

Continued on Page 146

PIONEER SEED COMPANY
Dimondale, Michigan.

SAINTPAULIA - SAXIFRAGA

RUDBECKIA. (rud-BEK-e-ah) CONEFLOWER Compositae.

Conical shaped disks of daisy-like flowers. They thrive in any ordinary soil, either in sun or partial shade. Seed can be planted early indoors or later outside. They are especially nice for cut flowers or massing in the border.

— amplexicaulis. Yellow petals, brownish disk; 2 ft; HA.....	RUD-1. 15¢
— bicolor, Golden Sunset. Double golden fls; HA.....	RUD-2G. 15¢
— hirta: Black Eyed Susan. Bien. but often annual; 3 ft; rays golden yellow, disks purple-brown, ¾" across; June-frost; comes in many varieties.....	RUD-6. 15¢
— Autumn Tints. Golden yellow petals, dark disks; 2 ft; HA.....	RUD-6A. 15¢
— Herbswald. Mostly red shades; New Swiss novelty.....	RUD-6H. 20¢
— Star of Kelydon. Golden yellow rays, dark brown disks; 2½ ft.....	RUD-6K. 15¢
— My Joy. Pure golden yellow, black disk; very good German var.....	RUD-6M. 15¢
— New Hybrids. Many new forms.....	RUD-6Y. 15¢
— Mixed Hirta R. Above mixed.....	RUD-6X. 15¢
— Speciosa, Newmanii. Pinkish rays, large dark cone; petals hang downward giving it an attractive effect; 2 ft; HP.....	RUD-17N. 20¢
— purpurea: see Echinacea purpurea.	
— Starlight. Semi-double; good range with many bicolors.....	RUD-17S. 15¢
— Rudbeckia Mixture. All kinds mixed.....	RUD-X. 15¢

SALPIGLOSSUS. (sal-pi-GLOS-is) Solanaceae.

Half hardy annuals from Chile, the Paisly Flower, suggests well the exotic beauty of its coloring, rich velvety tones of purple, blues, yellows, reds and white veined with gold. Flowers funnel-shaped, 2½" across; blooming from July till frost. Start seed early indoors being careful not to allow seedlings to become stunted; best in sandy soils and partial shade. Germinate in full light and a warm place. For winter flowers in the greenhouse start in late summer

S. sinuata:

— Dwarf Giant Flowered. Bushy; large fls; many colors; 1½ ft; HHA.....	SALP-1D. 20¢
— Emperor. Upright growth; heavy gold veining; extra; 3 ft; HHA.....	SALP-1E. 25¢
— gloxiniaeflora. Gloxinia-flowered, beautifully marked.....	SALP-1G. 20¢
— Salpiglossus Blend. Above blended together.....	SALP-X. 20¢

SALVIA. (SAL-v-ah) SAGE. Labiatea.

There are many species, some of which are very showy in the flower border. S. splendens, Scarlet Sage, is the best known, being grown for its red flowers. They all are easily grown from seed and require no special care.

— argentea. Silver S. Lvs 8", white woolly; fls rose-white; pan; HB.....	SALV-4. 20¢
— azurea. Blue or white fls, ½" long, racemes; 3 ft; TP.....	SALV-7. 20¢
— coccinea. Scarlet fls 1" long, racemes; Tex; 2 ft; TA or TP.....	SALV-20. 20¢
— farinacea. Violet-blue fls, ½" long, racemes; Tex; 3 ft; TP.....	SALV-24. 20¢
— Blue Bedder. Improved form in blue fls; longer spike; *hardy.....	SALV-24B. 20¢
— Interrupia. Bluish white fls, racemes; 2 ft long; N. AF; 4 ft; TSh.....	SALV-40. 30¢
— Jurisicii. Small purple fls branched racemes; 18"; Serbia; HP.....	SALV-44. 30¢
— officinalis. Garden Sage. Sow late fall or early spring (see Herb List).....	SALV-60. 15¢
— grandiflora. A large flowered strain from Switzerland.....	SALV-60G(C). 30¢
— patens. Gentian S. Blue fls, 2" long; Mex; 2½ ft; *HHP.....	Salv-61. 20¢
When marked with a star as: *HHP or *HB, treat the plant as an annual in the North.	
— Cambridge Blue. Pretty blue variety.....	SALV-61C. 20¢
— Mauve Queen. Lovely mauve variety.....	SALV-61M. 20¢
— pratensis. Bright blue fls, 1" long; racemes; 3 ft; HP.....	SALV-64. 20¢
— Sclarea. Clary S. Rose and white fls 1" long, panicle rac; 3 ft; HB.....	SALV-77. 20¢
— turkestanica. White fls tinged pink.....	SALV-77T. 25¢

S. SPLENDENS. Well known Scarlet Sage, plants of which are easily grown from early started seeds sown in Feb. or March. They are perennials but tender and thus grown as a tender annual in the North; blooms from July till frost. Seed germinate in about 15 days and should be kept in a warm place and in light; cover seed pan with glass. The varieties vary in time of flowering, height, type of growth and flower color.

— America. Earliest, uniform plants, 20" tall; brilliant scarlet; Oz. \$1.25.....	SALV-85A. 20¢
— Bonfire. Brilliant scarlet; erect stiff growth; 2½ ft; Oz. \$1.35.....	SALV-85B-20¢
— Fireball. Scarlet, very early; dwarf, heavy spikes Oz. \$1.25.....	SALV-85F. 20¢
— Rocket. Very early dwarf, 1½ ft; Oz. \$2.50.....	SALV-85R. 30¢
— St. John's Fire. Early dwarf, scarlet; upright 10" plants.....	Oz. \$4.00.....SALV-85S. 30¢
— Zurich. Earliest and very dwarf; compact; scarlet; 18".....	Oz. \$1.50.....SALV-85Z. 20¢
— Salvia Blend. All species except S. splendens.....	SALV-X. 20¢

SANTOLINA. (san-toh-LY-nah) Compositae.

Low border or edging plants, many of which are propagated by cuttings. Grayish low evergreen shrubs with many flowered heads of yellow or white disk flowers.

— rosmarinifolia. Solitary heads; 2 ft; Med. Regions; HHSh.....	SANO-6. 25¢
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SAINTPAULIA. (saynt-PAU-le-ah) AFRICAN VIOLETS. Gesneriaceae.

African Violets can be easily grown from seeds and these produce excellent flowers. The seed being small sow on the surface of mixture of peat, leaf mold and silver sand, equal parts; press seeds into soil, cover with glass; water from below; keep in warm place when they germinate in 2 weeks, when glass should be removed to avoid damping off.

— diplotricha. (ionantha) Best species for pot plants.....	SAPU-1. 50¢
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AFRICAN VIOLETS (by Carolyn K. Rector) 94 pgs; Complete cultural directions..... \$1.35

Temperate zone plants with heads of blue or purple disk flowers, easily grown from seed. Ornamental in the border.	
— gossypiphora. Dwarf, 6-12", fls in large umbels, silvery gray; HP.....	SAUS-4. 25¢

SANVITALIA (san-vi-TAY-le-ah) Compositae.

Small American annuals with small solitary heads and white or yellow rays, brown or purple disks. Light soil and full sun.

— procumbens, Double. Creeping Zinnia. Low border pl; hot dry places; orange-yellow Zinnia-like flowers; excellent for the rockery.....	SANT-1. 15¢
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Explanation of the headings. The headings for each genus, starts with the genus name, Mirabilis, followed by the pronunciation; next in capitals as FOUR O'CLOCKS, are the common names, if any; then the family to which it belongs, always ending in eae, which will help many flower growers in classifying many of its requirements. The figures in brackets as (*15 days) are the days required for a normal germination and the star * before, if present, means that the time is variable but germination can be looked for at the time indicated; star alone means no definite time and it could be a year.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

SCABIOSA - SCHIZANTHUS

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

SAPONARIA. (sap-oh-NAY-re-ah) SOAPWORT. Caryophyllaceae.

Easily grown hardy annuals and perennials some of which are excellent for the rockery. Flowers are red, pink or white, in cymes or panicles, native of Europe.

- calabrica, Mixed. Small deep rose, white, blood-red fls; 9"; HA..... SAPO-3X. 15¢
- White..... SAPO-3W. 15¢
- Red..... SAPO-3R. 15¢
- ocymoides. Bright pink fls, 1ft top clusters; RG and walls; tr; 9"; HP..... SAPO-8. 15¢
- splendens. Fls larger and deeper rose..... SAPO-8S(C). 30¢
- Vaccaria rosea. Pale pink fls, ½" ac; in loose cymes; 3 ft; HA..... SAPO-13R. 15¢
- White. White flowered form..... SAPO-13W. 15¢

SAXIFRAGA. (sak-SIF-rah-gah) SAXIFRAGE, ROCKFOIL. Saxifragaceae.

A very large genus much prized as flowers in the rockery and border. They are not hard to grow from seed and require the usual attention of all perennials. Sow seed either late in the fall or early in the spring for best results, altho they can be planted at other times of the year.

- aizoon, Mixed. Dense basal rosettes; fls ½" ac; 18 in. tall; HP..... SAX-4X. 25¢
- dense. Rosettes very small and silvery; fls creamy; HP..... SAX-4D. 25¢
- minor. Small silvered rosettes and short spikes; white fls; HP..... SAX-4M. 25¢
- rosea. Bright pink fls; HP..... SAX-4R. 25¢
- arguta. White fls with yellow spots; very small, panicles; 8"; HP..... SAX-22. 25¢
- cartilaginea. White, rose or purple fls; lvs in rosettes; 9"; HP..... SAX-54. 25¢
- cochlearis major. Tight pads silver rosettes; white fls on 6 inch stems; sun; gritty soils with lime; a fine rockery plant..... SAX-60M(W). 40¢
- crustata. Dense tufts; white fls, ½" ac; 1 ft; HP..... SAX-68. 25¢
- Cotyledon. White, veined pink, fragrant; ¾" ac; 2 ft; HP..... SAX-65(C). 30¢
- cuneifolia. Lvs rosettes; white fls, yellowish at base; 1 ft; HP..... SAX-70. 25¢
- cuneata. White fls in loose panicles; 6 in. tall; HP..... SAX-69(C). 30¢
- infundibuliformis. Spoon shaped lvs; HP..... SAX-70F. 25¢
- decipiens: see S. rosea for correct listing.
- Geum. White fls ¼ in. ac; 1 ft; HP..... SAX-96(C). 30¢
- Godseffiana. Deep yellow hybrid; 4"; HP..... SAX-100. 25¢
- oppositifolia. Red fls ½ in. ac; densely matted; to 2 inches; HP..... SAX-157(C). 30¢
- rotundifolia. White fls to ¾ in. ac; 2 ft; HP..... SAX-176(C). 30¢
- sarmientosa. Strawberry Geranium; white; 2 ft; baskets; HP..... SAX-180(C). 30¢
- irifurcata. (decipiens) Milk white fls; lvs kidney-shape; 8"; HP..... SAX-194. 25¢
- Mossy White. An English white variety..... SAX-194M. 25¢
- H. S. Stokes. Brilliant red, not entirely true from seed; HP..... SAX-194S. 25¢
- umbrosa. White or pink fls; 1ft; HP..... SAX-195. 25¢
- virginensis. Lvs in rosettes; fls white, ½" ac; 1 ft; HP..... SAX-200. 25¢
- Saxifraga Blend. All kinds mixed..... SAX-X. 25¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

SCABIOSA. (skay-bee-OH-suh) MOURNING BRIDE, PINCUSHION FL. Dipsaceae.

A very popular garden flower for sunny positions. Sow seeds early indoors or later in the open ground. In the South plant the annuals late in the fall. Pinch back annuals for bushy plants and by keeping flowers cut they will bloom all summer.

- atropurpurea. Sweet Scabious. Erect HA in many forms; 3 ft..... SCAB-3X. 15¢
- Imperial Giants. Very large double fls; frilled; 3-4 ft; HA..... SCAB-3G. 15¢
- Blue Moon. Large dark lavender-blue without raised center..... SCAB-3M. 15¢
- Giant Hybrids. Large fls; compact plants; excellent cutfls..... SCAB-3H. 15¢
- Tall Large Flowered, Mixed. Excellent garden strain and cut..... SCAB-3X. 15¢

EIGHT SPECIAL COLORS:

- Ageratum Blue. Pretty light blue..... SCAB-3WA. 20¢
- Azure Fairy. Fine color, azure-blue..... SCAB-3WF. 20¢
- Loveliness. Pretty salmon-rose shades..... SCAB-3WL. 20¢
- Orchid Shades. Soft rose-lavender blends..... SCAB-3WR. 20¢
- Peach Blossom. Peach blossom pink..... SCAB-3WP. 20¢
- Above Blended. Hand made blend of varieties in right proportions..... SCAB-3WX. 15¢

Bulk Prices: Any of above, Oz. 75¢; ¼ lb. \$2.00; Lb. \$7.00.

- caucasia, House Hybrids. One of the loveliest perennials; shades blue SCAB-6H. 20¢
- Columbaria, Mixed. Delicate lavender and pink fls; 18"; HP..... SCAB-7X. 20¢
- Lavender. Same in delicate lavender..... SCAB-7L. 20¢
- Pink. Same in delicate pink..... SCAB-7P. 20¢
- graminifolia. Pale blue fls in flat heads, 1½" ac; 1 ft; HP..... SCAB-18. 30¢
- ukranica..... SCAB-18. 30¢
- Perennial Scabiosa Mixed. All the perennial species..... SCAB-PX. 20¢

SCHIZANTHUS. (sky-ZAN-thus) BUTTERFLY FLOWER. Solanaceae. G 2-4 wks.

Beautifully marked and unusually formed flowers in chamois, rose, lavender and purple shades with fern-like foliage. Excellent for pot culture the year round or in partly shaded beds outdoors, doing best in a cool climate. Pinch tops to induce bushy growth; for winter flowers, start in Sept. for blooms in Feb. to May. For summer flowers sow seeds indoors in March. Set out in late May. Schizanthus makes up nicely in corsages and last well. They are annuals or biennials; 18 inches tall.

Hybrids: Listed here are all the popular varieties usually from hybridization.

- Crimson Cardinal. A new, highly recommended English novelty..... SCHZ-1C. 20¢
- Dr. Badger's Hybrids. Brilliant range, no whites; golden blotch; 1 ft..... SCHZ-1B. 20¢
- Chislehurst Hybrids. Beautiful strain in violet and purple shades..... SCHZ-1Z. 15¢
- Hurst's Monarch. Compact English strain; fine color range..... SCHZ-1H. 20¢
- wisetonensis. Hybrid in all shades and upper lip suffused yellow..... SCHZ-1W. 20¢
- Butterfly Mixture. Brilliant range; all kinds; 1 ft..... SCHZ-X. 15¢

SKIMMIA. (SKIM-mee-uh) Rutaceae.

Evergreen shrubs native of China and the Himalayas, with small white flowers in terminal panicles. An ornamental shrub for the South, not hardy north but can be grown indoors as a pot plant.

- japonica. Bright red fruits; 5 ft; HHP..... SKIM-1. 25¢
- The letters C and W stand for cool and warm, above or below about 60 degrees F; D and L stands for dark and light, to keep the seed pan in a light or dark place when while germinating.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Plants Best Transplanted in the Spring

Many plants do not take kindly to fall transplanting and therefore this work should be delayed till the spring months.

Following is a partial list of those that come to mind. Of course there are others and possibly some of our readers have had experience in transplanting and will add to the list.

The Amellus section of Michaelmas Daisies (Aster), Catanache coerulea, the Shasta Daisies (Chrysanthemum maximum, all Coreopsis, all perennial Delphiniums, Echinacea purpurea, Gazania, Helianthus Monarch, Hollyhocks, Kniphofia, Lavatera olbia, Lobelia cardinalis, Meconopsis, Mesembryanthemum, Mimulus, Penstemons, Pyrethrum, Salvia, Scabiosa caucasica, Tropaeolum speciosum.

GERMINATING FLOWER SEED

Continued from Page 135

should remain in the refrigerator, with periods from a week to more than a month being recommended. Experiments are also made with deep freeze treatment but I feel that such extremely low temperature will prove unnecessary, and perhaps even harmful. Pouring hot water over seeds, especially of Primulas, has proved successful in some cases (results here, with controls, have shown nothing advantageous in this method on certain species); no definite temperature is ever given, but apparently it is 125 to 150 degrees Far.

Some few species seem to require not one, but a series of cold spells before they will germinate, and ungerminated sowings should be left undisturbed over two years at least. It is quite possible, however, that ripeness or after-treatment of the seeds in question, rather than an inherent character is responsible for this long delay.

I am informed by a German specialist that most Androsaces will not germinate in less than one or two years, yet an occasional seedling has appeared from my sowings within a few weeks. One simply cannot be arbitrary on the matter of germination!

NOTE: Many of our common flowers were not as easy to germinate as they are at the present time. Thru many generations, the one that germinated first and easiest were the ones that were grown and thus the one seed was saved and finally a strain naturally developed that germinated easily.

The same will eventually take place with many of our rarer flowers and growers, if interested in a species, should try to develop strains that are more easy to handle than the wild types.

Do not use any manure when transplanting Lupines.



ZANTEDESCHIA or CALLA LILY

Continued from Page 137

then place in a warm place till growth starts when you can give it more water.

Some of the roots will come out of the top of the soil, but there will be plenty of roots going down, too, and soon the top will appear and it will flower in about two months from planting time. Keep the Calla growing till spring planting time, then put outside for finishing of growth.

For the beginner, the best varieties are the pink, white and yellow. The newer varieties are generally harder to grow and not so sure to bloom and some of them such as the Black Calla (*Arum palestinum*), need very special care as they are dormant in the spring and summer, and have to be started in September.

As Callas are rapid growers, they grow from seed to blooming size in one year, few other bulbs will equal them nor will any other bulbs give you so much for the time and effort spent on them.

Seed sown in early winter will grow to nice size plants by spring, many having bulbs as large as marbles. But care is required when they are set in the open garden, for when the sun gets on them many go to rest and refuse to grow through the summer, but when taken up in the fall and stored, the following spring they are ready to start and then they will grow rapidly. In growing from seed I find the yellow variety does not come up so well and is much slower in growth; both the pink and white varieties come up very good and grow easily.

When planting the seed, use a light soil, a deep pan or flat, and place the seed in rows 2 inches apart and about the same in the rows, so the seedlings will have room to grow well till spring. They will need but little sun the first winter, but in the spring set the flat out where they will get the warm air and sunshine.

One of the lovely pictures of spring is to see a row of these new seedlings growing with their bright green spotted foliage, and they are as lovely as any other foliage plant besides you get the pretty flowers later on as an extra show.

Why not start a small collection of these lovely flowering bulbs and see for yourself how lovely they are and how long they last for cut flowers. Best of all you will not have to fight insect pests for they seem to be free of all bug troubles.

By Walter Allgeyer, Michigan

TREE SEEDS

Continued from Page 136

- PICEA ENGELMANNII** (Engelmann Spruce) Mont. or Colo. grown.....\$8.00 lb.
PICEA MARIANA (Black Spruce) Wisconsin grown seed.....\$13.50 lb.
PICEA PUNGENS (Colo. Blue Spruce) Colo. grown seed.....\$9.00 lb.
PICEA PUNGENS GLAUCA (Select Colo. Blue Spruce) Colo. grown.....\$13.00 lb.
PINUS CEMBRA (Swiss Stone Pine) Austria grown seed.....\$3.50 lb.
PINUS BANKSIANA (Jack Pine) Wisconsin grown.....\$5.00 lb.
PINUS CONTORTA (Lodgepole Pine) Montana grown.....\$11.00 lb.
PINUS EDULUS (Pinyon Pine) Utah grown seed.....\$2.25 lb.
PINUS FLEXILIS (Limber Pine) Montana grown seed.....\$3.00 lb.
PINUS MONTANA MUGHUS (True Dwarf Mugho Pine) Austria seed.....\$6.00 lb.
PINUS MONTICOLA (Western White Pine) Idaho grown seed.....\$5.00 lb.
PINUS NIGRA (Austrian Pine) Austrian grown seed.....\$3.50 lb.

Continued on Page 141

SISYRINCHIUM - SKIMMIA**SINNINGIA.** (sin-NIN-jee-ah) **GLOXINIA.** Gesneriaceae.

Brazilian plants with tuberosous corm-like roots. The Gloxinia being the best known and requires a warm humid atmosphere and shade; after blooming store at 45 degree F until following February; do not wet leaves.

—**Speciosa.** Gloxinia; seed saved from large collection of best colors..... **SINN-25.** 25¢

SILENE. (sy-LEE-nee) **CATCHFLY, CAMPION.** Caryophyllaceae.

Annual, biennial and perennial plants in many species, most showy and valued both in the border and rockery. The seed of the annuals can be sown in the fall, which will produce earlier flowers.

- acaulis.** Pink fls; moss-like tufted perennial; May-Aug; HP..... **SILE-1(C).** 40¢
 —**v. elongata.**..... **SILE-1E(C).** 40¢
 —**alpestris.** Glistening white fls; ½" ac; panicles; June-Aug; 6 in; HP..... **SILE-4.** 20¢
 —**flora pleno.** Double flowered form..... **SILE-4D.** 25¢
 —**fl. pl.** Fully double fls, 4 in. stems; May; well drained soil; HP..... **SILE-4D(W).** 30¢
 —**armeria.** Bright magenta fls; 1 ft; HP; sow late fall or ey sp..... **SILE-6.** 25¢
 —**Peach Blossom.** Compact, flesh colored fls in drooping rac; 10"; HP..... **SILE-6B.** 25¢
 —**pendula.** Rose and white fls; 20"; HP..... **SILE-6P.** 25¢
 —**New Art Shades.** Dwarf, double; RG; HP..... **SILE-6A.** 20¢
 —**Fortunii.** Rose or white fls; best grown as HA; Sept; 3 ft; HP..... **SILE-37.** 15¢
 —**Hookeri.** White or pink fls; 2" ac; lovely for RG; 5 in; HP..... **SILE-48.** 25¢
 —**maritima.** Pretty white fls; RG; 5"; HP..... **SILE-62.** 15¢
 —**pendula Rose.** Rose fls; ½" ac; drooping racemes; 10 in; HA..... **SILE-75.** 15¢
 —**Bonnetti.** Purplish fls; stems brow-red; 10"; HA..... **SILE-75B.** 20¢
 —**Byou.** Double salmon-rose fls; 10"; HA..... **SILE-75Y.** 20¢
 —**White.** Attractive white; 10 in; HA..... **SILE-75W.** 20¢
 —**Triumph.** Compact double crimson; HA..... **SILE-75T.** 20¢
 —**Shafta.** Rosy purple fls; RG; 6 in; HP..... **SILE-100.** 20¢

SISYRINCHIUM. (sis-ir-RIN-ce-um) **BLUE-EYED-GRASS.** Iridaceae.

American grass-like perennials with small blue or yellow flowers. Attractive in colonies in open rather moist places. They are easily grown.

- augustifolium.** Blue stars with yellow eyes; 6"; RG; HP..... **SISY-1.** 25¢
 —**Bermudiana.** Large blue fls; sunny RG; 9"; HHP..... **SISY-2.** 25¢
 —**californicum.** Bright yellow fls, ½" long; 1 ft; HP..... **SISY-7.** 25¢
 —**Douglasii.** Best; large violet to white fls; 8"; HP..... **SISY-10.** 25¢
 —**grandiflorum:** see **Douglasii.**
 —**striatum.** Yellow fls striped; 3 ft; attractive; HP..... **SISY-23.** 25¢
 —**Sisyrinchium Mixture.** All species mixed..... **SISY-X.** 20¢

SCILLA. (SIL-ah) **SQUILL.** Liliaceae.

Attractive and popular bulbous plants with narrow basal leaves and sprays of starry flowers in blue, white or pink. Ideal for rockery, woodland or border; they also can be grown in pots. They are hardy in the North; the bulbs are delivered in fall.

- pratensis.** Very small blue fls in racemes; 18 in; HBb..... **SCIL-14(C).** 30¢
 —**bifolia.** Dwarf deep blue, blooming in Feb..... **Bulbs:** 10-55¢; 100-\$3.00
 —**hispanica:** Spanish Bluebell; (*Scampanulata*); all mixed. **BULBS:** 10-50¢; 100-\$4.00.
 —**alba maxima.** Wood Hyacinth. Naturalizing; shade; white **BULBS:** 10-60¢; 100-\$5.00.
 —**Arnold Prince.** Deep rose; long trusses..... **BULBS:** 10-60¢; 100-\$5.00
 —**Blue Queen.** Early pale blue; pretty..... **BULBS:** 10-60¢; 100-\$4.75
 —**Excelsior.** Strong grower; bright blue large spikes..... **BULBS:** 10-60¢; 100-\$5.00
 —**nonscripta.** (nutans) English Bluebell; in racemes; 1ft; HBb..... **SCIL-12(C).** 30¢
 —**Peach Blossom.** Pretty pink variety..... **BULBS:** 10-60¢; 100-\$5.00
 —**White Triumphant.** Pretty strong growing white..... **BULBS:** 10-60¢; 100-\$6.00
 —**siberica.** Deep blue; ½" ac; nodding racemes;... **BULBS:** 10-60¢; 100-\$4.50; 1000-\$25
 —**Spring Beauty.** Large pure white..... **BULBS:** 10-70¢; 100-\$5.50
 —**Scilla Blend.** Mixture of all varieties in seed..... **SILL-X.** 20¢

SCHINUS. (SKY-nus) **Anacardiaceae.**

Ornamental trees with small flowers in racemes or panicles, followed by fruits. Not hardy in the North; planted as lawn specimens in South; can be grown in greenhouse.

- Molle.** Cal. Pepper T, Peruvian Mastis T. Ev to 20 ft; yellowish fls; T tr **SCHN-6.** 25¢
 —**terebinthifolius.** Brazilian Pepper T; Xmas Berry T; to 20 ft; red fr..... **SCHN-8.** 25¢
 —**Schinus Mixed.** Both kinds..... **SCHN-X.** 25¢

SCHIZOSTYLUS. (scky-ZOSS-til-iss) **CRIMSON FLAG, KAFIR-LILY** Iridaceae.

A greenhouse flower in the North for cutflowers. Flowers in spathes, red.

- coccinea.** Deep crimson; 2" ac; lvs grass-like; 2 ft; TP..... **SCHI-1.** 25¢

SCIADOPITYS. (sy-ad-DOP-itiss) **UMBRELLA PINE.** Taxodiaceae.

Japanese evergreen tree, slow growing and ornamental.

- verticillata.** Hardy up to Michigan; lvs small and scale-like..... **SCIA-1.** 35¢

Seafortia: see **Archontophoenix.**

SCROPHULARIA. (skrof-yew-LAY-re-ah) **FIGWORT.** Scrophulariaceae.

Perennial plants rarely planted in the border or for medicinal purposes; hardy.

- chrysanthea.** Greenish yellow fls; 2 ft; HB or HP; Caucasus..... **SCRO-3.** 25¢

SECURIDACA. (see-q-RID-ah-see) **RHODESIAN VIOLET TREE.** Popygalaceae.

Rhodesian Violet Tree. Suitable for the South only.

- longipendunculata.** Very beautiful T; small pea-like purple-pink fls; frag..... **SECU-1.** 30¢

SEDUM. (SEED-um) **STONE CROP. LIVE-FOREVER.** Crassulaceae.

Succulent or fleshy, erect or prostrate plants, mostly hardy, easily grown and popular for the rockery, walls and such places. No rock garden is complete without Sedums; they are very appealing to children. Sow seeds any time and treat like any perennial. Some are grown indoors. They thrive in sunny positions, light soils and dry places.

- acre.** Vigorous, spreading; mats rich green; golden stars; 4"; HP..... **SEDM-2.** 20¢
 —**album x murale.** Purple fol; pinkish fls; creeping mat forming; 8"..... **SEDM-8M.** 25¢
 —**caeruleum.** Blue flowered; 4 in; HA..... **SEDM-28.** 20¢
 —**Leiberghil.** Fine RG; fleshy spoon-shaped lvs; golden stars; 10"; HP..... **SEDM-76.** 25¢
 —**oreganum.** Green lvs; bright yellow fading to pink; HP..... **SEDM-100.** 20¢
 —**Rosea.** Yellowish or greenish fls; 1 ft; HP..... **SEDM-127.** 25¢
 —**sempervivoides.** Red fls ½ in. ac; 1 ft; HHB..... **SEDM-138(C).** 30¢
 —**Tatarinowii.** White to pink fls; 8 inchs; HP; China..... **SEDM-158.** 25¢
 —**Sedum Mixture.** All kinds mixed..... **SEDM-X.** 25¢

PIONEER SEED COMPANY**DIMONDALE MICHIGAN**

SHEPHERDIA - SOLANUM

SENECIO. (se-NEE-she-oh) **GROUNDSEL. CINERARIA.** Compositae.

A large and variable genus including shrubs and trees. They are usually easy to grow from seed in a good loamy soil. The greenhouse Cinerarias correctly belong here. Many of the herbaceous sorts are grown for their flowers.

- diversifolia. Low growing sh; yellow fls; HP..... SENE-21. 25¢
- doricum. Orange Daisy. 1 ft; RG; HP..... SENE-24. 25¢
- elegans. Fls heads loose corymbs, rays purplish, disks yellow; 2' HA..... SENE-29. 15¢
- jacomontiana. Collected in the Himalayas; HP..... SENE-30. 50¢
- macroglossus. Cape Ivy. Bright yellow daisies; herb. cl; TP..... SENE-43. 25¢
- Purshiana. Western sp; light gray fol; bright yellow heads; 8"; HP..... SENE-58. 20¢
- scandens. Climber to 20 ft; loose panicles; yellow ray fls; 3-4 ft; HHP..... SENE-66. 20¢
- Senecio Mixture. All species mixed..... SENE-X. 20¢

SERRATULA. (ser-RA-tu-la) Compositae.

Perennials allied to Centaurea. Flowers are either single or in corymbs, of disk flowers. Good in the border.

- coronata..... SERR-1. 25¢

SETARIA. (c-TAY-re-ah) Gramineae.

Tender annual and perennial grasses; start indoors early and transplant outside when frost danger is over.

- italica. Fox-tail Millet. Ornamental grass; 5 ft; TA..... SETA-1. 15¢

SHAMROCK.

- True Irish..... SHAM-1. 20¢

SEQUIOIA. (se-KWOI-ah) Taxodiaceae.

The large evergreen tree of California growing to 300 ft. They grow only near the sea where the fogs occur.

- gigantea. Giant Sequoia (Sequoiadendron)..... Oz. \$2.00..... SEQ-1. 25¢
- sempervirens. Redwood. (Calif. seed only)..... Oz. \$1.75..... SEQ-2. 25¢

SHEPHERDIA. (she-PUR-de-ah) Elaeagnaceae.

Shrubs and small trees, adapted to dry rocky soils, very hardy and they do well near the seaside. Sow seeds in the fall or stratify. Will quote by lb. if interested.

- argentea. Buffalo Berry. Thorny; 18"; very hardy hedge plant..... SHEP-1. 25¢
- canadensis. Thornless; fruit red or yellow; very hardy; 8ft..... SHEP-2. 25¢

SIDALCEA. (si-DAL-see-ah) Malvaceae.

Flowers are like miniature Hollyhocks, in spikes or clusters. Thrive in a rich sandy soil. The perennials bloom over a long period; good for the flower border.

- Stark's Hybrids. Excellent color range; 3 ft; HP..... SIDA-55. 20¢

SMILACINA. (smy-lah-SYE-nah) FALSE SOLOMON'S SEAL. Liliaceae.

Perennial rhizomatous plants; small white or greenish flowers in terminal racemes or panicles. Moist, part shady places; nice in colonies; easy

- stellata. Wild Lily-of-the-Valley. 10"; May-June; HP..... SMIL-5. 20¢

SNAPDRAGON: see *Antirrhinum*.

SOLANUM. (soh-LAY-num) NIGHTSHADE. Solanaceae.

A very large genus to which the potato and egg plant belong. It is a rather confused genus and the interesting species to the flower grower are the ornamental berried species, such as the popular Jerusalem Cherry. Sow seeds of the annuals where they are to grow; the perennials can be started indoors early or handled like any other tender perennial. They are easy to grow, many making excellent indoor pot plants.

- aculeatissimum. Decorative plant having bright scarlet fr; 2 ft; TP..... SOLN-1. 25¢
- Capsicastrum. Scarlet or orange pointed fruits ½" ac; 2 ft; TP..... SOLN-10. 25¢
- Hendersonii. Hybrid; orange-red oval fruits; nice pot pl; 15"; TP..... SOLN-23. 25¢
- marginatum. Yellow globose fruits; 1½" ac; spiny sh; to 4 ft; TSH..... SOLN-32. 25¢
- nigrum. Black fruits used in preserves, pies, etc; forms known as Garden Huckleberry, Wonderberry; 2¼ ft; TA..... SOLN-35. 25¢
- Pseudo-Capsicum. Jerusalem Cherry. Scarlet or yellow fr; 2 ft; TP; Mixed..... SOLN-36X. 25¢
- The popular Xmas Cherry pot plant of the florist..... SOLN-36C. 25¢
- Clevelandii. Select foliage; bright red round fr; 18"; TP..... SOLN-36H. 25¢
- Havacek's Masterpiece. Compact 15" var for pots; bright red fr;..... SOLN-36P. 25¢
- Henderson's New Paterson. Compact form; bright scarlet fr; 15"..... SOLN-45. 25¢
- texanum. Spineless form; Scarlet Tomato; 3 ft; TA..... SOLN-49. 25¢
- verbascofolium. A tree to 30 ft; fruits yellow; for the S; TP..... SOLN-X. 20¢
- Solanum Mixture. All kinds mixed..... SOLN-X. 20¢

SOLDANELLA. (sol-dan-NEL-ah) Primulaceae.

Perennial plants with nodding blue, violet or white fringed flowers native of the Alps. They thrive in moist shady places in the rockery.

- alpina. Roundish lvs; pale blue fls in umbels; 6"; HP..... SOLD-1. 25¢

SOLIDAGO. (sol-id-DAY-goh) GOLDENROD. Compositae.

Erect perennials with golden yellow Goldenrod flowers, many of which are excellent border plants. Do not fertilize them too much; easily grown from seed.

- elongata. Compact fl clusters, yellow; 3 ft; HP..... SOLI-17. 20¢
- missouriensis. Dwarf sp; 18" tall; golden heads in panicles; HP..... SOLI-35. 25¢
- Solidago Mixed. Above mixed..... SOLI-X. 20¢

SOPHORA. (sof-FOH-ruh) Leguminosae.

Showy ornamental woody plants when in bloom; flowers in terminal panicles or racemes, followed by cylindrical or 4-winged pods. They are not hardy in the North, especially the evergreen species. Write for prices in quantity if interested.

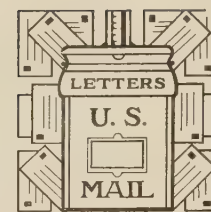
- japonica pendula. Japanese Pagoda Tree. To 50 ft; hardy in N..... SOPH-3. 25¢
- secundiflora. Mescal Bean. Frag; violet-blue fls; ev sh to 30 ft; Tex..... SOPH-6. 25¢
- viciifolia. Dec. sh to 8 ft; bluish violet fls in racemes; hardy in N..... SOPH-9. 25¢
- Sophora Mixed. All kinds mixed..... SOPH-X. 20¢

Explanation of the headings. The headings for each genus, starts with the genus name, Mirabilis, followed by the pronunciation; next in capitals as FOUR O'CLOCKS, are the common names, if any; then the family to which it belongs, always ending in eae, which will help many flower growers in classifying many of its requirements. The figures in brackets as (*15 days) are the days required for a normal germination and the star * before, if present, means that the time is variable but germination can be looked for at the time indicated; star alone means no definite time and it could be a year.

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

THE MAIL BOX



We receive many comments in the mail from subscribers, much like the following from F. W. Boyer of the Lane Gardens and Nursery of Eugene, Oregon, "That is the finest Magazine I have ever had the pleasure of reading. I am always on the lookout for the new and rare in plant life. Keep up the good work."

As Mr. Welch remarks in this month's Iris Column, there is much to flower growing beyond the mere planting of the same kind of flower year after year and for those who grow something different each year, there is also the added pleasure of looking forward to its flowers. Practical information will always receive first place in our column; we ask that more readers send in short items on their experiences in growing different flowers.

CAMPANULA ISOPHYLLIA

The following is in response to our request for those growing *Campanula isophyllia* alba.

I have grown this *Campanula* for several years. It begins to bloom the latter part of July here and for about two months. I have often wondered why more people do not grow it for they are so beautiful.

Miss Genevieve Daniels, South Laguna, California.

TREE SEEDS

Continued from Page 140

- PINUS PONDEROSA** (Western Yellow Pine) Montana grown.....\$3.50 lb.
- PINUS PONDEROSA SCOPULORUM** (Bull Pine) Montana grown.....\$3.50 lb.
- PINUS RESINOSA** (Red or Norway Pine) Minnesota grown.....\$16.50 lb.
- PINUS STROBUS** (White Pine) Minnesota grown seed.....\$3.00 lb.
- PINUS SYLVESTRIS** (Scotch Pine) Austrian grown seed.....\$5.50 lb.
- PINUS SYLVESTRIS** var. **RIGENSIS** (Riga Scotch Pine) Poland grown.....\$8.50 lb.
- PSEUDOTSUGA TAXIFOLIA** (Flathead Douglas Fir) Montana.....\$8.50 lb.
- (The above source recommended for Christmas Trees.)
- PSEUDOTSUGA TAXIFOLIA GLAUCOA** (Douglas Fir) Snowy Mts; Mont.....\$8.50 lb.
- PSEUDOTSUGA TAXIFOLIA GLAUCOA** (Douglas Fir) Colorado.....\$8.50 lb.
- TAXUS CUSPIDATA** (Japanese Yew) Japan grown seed.....\$4.00 lb.
- THUJA OCCIDENTALIS** (American Arborvitae) Wisconsin grown.....\$6.00 lb.
- THUJA PLICATA** (Western Arborvitae) Idaho or Wash. grown seed.....\$6.00 lb.

TREE and SHRUB SEED

- ACER GLABRUM** (Dwarf Mountain Maple) Montana grown c.s.....\$2.50 lb.
- ACER GRANDIDENTATUM** (Mountain Maple) Utah grown c.s.....\$2.50 lb.
- ACER NEGUNDO** (Box Elder) Montana wings.....\$1.00 lb.
- ACER PLATANOIDES** (Norway Maple) wings.....\$1.35 lb.
- COTONEASTER ACUTIFOLIA** (Peking Cotoneaster) Montana c.s.....\$6.00 lb.
- ELEAEAGNUS ANGUSTIFOLIA**..... (Russian Olive) Montana grown d.b.....\$1.25 lb.
- ELEAEAGNUS ANGUSTIFOLIA**..... (Russian Olive) Montana c.s.....\$1.80 lb.

Continued on Page 142

GROWING SAGE

Sage flourishes in a light sandy soil that is in a good state of fertility. It loves sunshine.

Start your plants early, either by planting indoors, or direct to the garden; if they have been drilled in the garden late the fall before, so much the better. When drilled direct to the soil, in the spring, mix a little radish seed with them so that the radish will mark the row and thus allow you to cultivate earlier than if you had to wait for the Sage to germinate.

Space your plants about 15 inches apart. If more than one row is planted make the rows 18-30 inches apart, depending upon how you will cultivate them, however if planted 15 by 18 inches, the entire space can be mulched, which will save a lot of work.

Sage plants should be renewed every 4-5 years. Old plants get straggly and coarse. Two or three good plants will furnish all the Sage for an average family.

Nip off the flowering tips of the young plants, early in the summer so as to cause a bushy growth. If the season turns out to be especially dry the first summer, furnish water. If mulched, this may save your plants.

You should have every issue; subscription price now only \$2.00 per year; monthly.

TREE SEEDS

Continued from Page 140

- PACKETS ARE 50¢ each; 4 ox. at the lb.
- PRUNUS DEMISSA** (Western Chokeberry)
- JUNIPERUS COMMUNIS** (Bush Juniper)
- ABIES GRANDIS** (Grand Fir Washington grown seed\$4.00 .bl
- ABIES BALSAMEA** (Balsam Fir) Alberta
- ELEAEGNUS COMMUTATA** (Silverberry Montana grown seed c.s.\$2.00 lb.
- FRAXINUS LANCEOLATA** (Green Ash) Montana, wings\$1.25 lb.
- LONICERA TARTARICA** (Siberian Honey-suckle) No. Dak. c.s.\$5.00 lb.
- PRUNUS AMERICANA** (Wild Plum) No. Dakota seed c.s.\$1.80 lb.
- PRUNUS DEMISSA** (Western Chokeberry) No. Dakota seed c.s.\$2.00 lb.
- RIBES AUREUM** (Flowering Currant) c.s. Montana seed\$2.00 Oz.
- RHAMNUS CATHARTICA** (Buckhorn) c.s. Montana grown seed\$4.00 lb.
- RHAMNUS DAURICA** (Dahurian Buck-thorn) No. Dak. c.s.\$5.00 lb.
- ROSA MULTIFLORA** (Japanese Rose) c.s. Japan\$3.50 lb.
- SAMBUCUS CALICARPA** (Red Berry Elder) Utah d.b.\$2.50 lb.
- SAMBUCUS GLAUCA** (Blue Elder) Mont. d.b.\$2.00 lb.
- SHEPHERDIA ARGENTEA** (Buffalobery) Montana c.s.\$9.00 lb.
- SORBUS AMERICANA** (Mountain Ash) (tree) Montana d.b.\$1.40 lb
- SORBUS SCOPULINA** (Mountain Ash) (Shrub) Montana d.b.\$1.50 lb.
- SYMPHORICARPUS RACEMOSA** (Snow-berry) Montana c.s.\$9.00 lb.
- SYRINGA VULGARIS** (Lilac) No. Dakota c.s.\$4.50 lb.
- VIBURNUM LANTANA** (Wayfaring-tree Viburnum Austria c.s.\$3.00 lb.
- YUCCA GLAUCA** (Spanish Bayonet) c.s. Montana\$1.00 Oz.

PIONEER SEED COMPANY
Dimondale, Michigan, U. S. A.

STAPHYLEA - STEWARTIA

SORBUS. (SOR-bus) MOUNTAIN ASH. Rosaceae.

Deciduous shrubs and trees, hardy in the North. They thrive in dry soil. Sow seeds when ripe or stratify over winter. Ask for bulk prices if interested.

- americana.** American A. To 30 ft; hardy SORB-2. 25¢
—**Aria.** White Bean-tree. To 50 ft SORB-5. 25¢
—**commixta.** To 25 ft; native of Japan and Korea SORB-9. 25¢
—**Aucuparia.** European Mountain Ash. To 50 feet SORB-6. 25¢
—**domestica.** Service Tree. To 50 ft; native N. Af. W. Asia SORB-13. 25¢
—**terminalis.** Wild Service T. To 50 ft; native of N. Af; Asia Minor.... SORB-32. 25¢

SPATHODEA. (spath-OO-de-ah) Bignoniaceae.

Tropical African evergreen trees suitable only for the far South; they are very beautiful trees when in flower.

- nilotica.** Dwarf Af. Tulip Tr; red tulip fls; beautiful; frost tender.... SPAT-3(M). 25¢

SPECULARIA. (spek-u-LAY-re-ah) Campanulaceae.

Annual plants resembling Bellflowers, excellent for the rockery, border or for edging; easily grown from seed.

- Speculum-Veneris.** Venus Looking Glass. Edging; violet-blue; 12"; HA.... SPEC-3. 20¢

SPARTIUM. (SPAHR-tee-um) SPANISH or WEAVER'S BROOM. Leguminosae.

Ornamental shrubs native of S. Europe and hardy to Ohio river and the Pacific Coast.

- junceum.** To 10 ft; rush-like branches; yellow fls; TSh..... SPAM-1. 25¢

SPRAGUEA. (SPRAYG-ee-ah) PUSSY PAWS. Portulacaceae.

Small alpine plants with rosettes of thick fleshy evergreen leaves and heads of fluffy pink flowers on prostrate stems; excellent in rockery in light shade.

- multiceps.** Dense heads rose-purple fls; 6"; native Wash-Wyo..... SPRG-1. 25¢

STAPHYLEA. (staf-il-LEE-uh) BLADDER-NUT. Staphyleaceae.

Ornamental shrubs or small trees, white flowers in terminal panicles and bladder-like fruits. Most are hardy in the North; they prefer partial shade, moist rich soil. Sow seeds when ripe or stratify till spring. Ask for bulk prices if interested.

- trifolia.** To 15 ft; fls in nodding panicles; fr 3" long; native E. U. S..... STAP-9. 25¢
—**STAR OF TEXAS:** see ZANTHISMA.

STATICE: This genus has been recently reclassified and all its species are now in either *Ameria* or *Limonium*, which see.

STEWARTIA. (stew-ART-ee-uh) Theaceae.

N. American and Asian shrubs and trees, with showy white flowers. They are ornamental, fairly hardy in the North; mixture of peat and loam soil best; ask bulk pr.

- koreana.** Tree to 50 ft; Korea..... STEW-1. 75¢
—**monadelpha.** Tree to 80 ft; Japan..... STEW-4. 50¢
—**Pseudo-Camellia.** Tree to 50 ft; fls 2½" ac; white stamens; orange ant.... STEW-7. 25¢

STIPA. (STY-pa) SPEAR or FEATHER GRASS. Gramineae.

Perennial ornamental grasses, with awn-like spikelets borne in panicles and very popular as an ornamental grass.

- pennata.** Very pretty; tufted to 3 ft; dense plumes; HP..... STIP-3. 20¢
STOCKS: see *Mathiola* and *Malcomia*.

STREPTOCARPUS. (strep-toh-KAHR-pus) CAPE-PRIMROSE. Gesneriaceae.

They are of easy culture and thrive in a cool greenhouse. Sow seeds in Feb. or March for flowering plants the following autumn and winter.

- Hybrids.** Gold Medal Strain..... STRP-4. 35¢

STYRAX. (STYE-rax) STORAX. Styracaceae.

Shrubs and trees with showy white flowers in racemes followed by fruits. Few are hardy enough in the North. They thrive in light soils. Ask for bulk prices.

- americana.** To 10 ft; hardy to N.Y; native of Va..... STAX-1. 25¢
—**japonica.** To 25 ft; fls fragrant; hardy in North..... STAX-6. 25¢
—**Obassia.** To 30 ft; fls frag; hardy in N; Japan..... STAX-8. 25¢
—**Styrax Mixed.** Above kinds mixed..... STAX-. 20¢

SWEET PEAS....(*Lathyrus odoratus*) Leguminosae.

Germ. 10 days.

In the North, Sweet Peas should be started very early in the spring, sowing the seed where they are to grow and about 3" apart in the row. In the South and on the West Coast, they are planted in the fall, when they flower early in the spring. To keep them blooming, the flowers must not be allowed to go to seed. See special articles on further cultural directions. You will find that the varieties offered here are the best.

SPENCER VARIETIES: The most popular for garden growing, especially in the North. The varieties listed represent the very best and latest strains; there are none better.

- Bonni Briar.** Large rose-pink..... SPEA-1BB. 15¢
—**Burpee's Best White.** White seeded..... SPEA-1BW. 15¢
—**Capri.** Clear silver blue; excellent..... SPEA-1C. 15¢
—**Charming.** Pretty flushed rosy cerise..... SPEA-1CM. 15¢
—**Chieftain.** Pure satiny mauve..... SPEA-1CH. 15¢
—**Elstree.** Bright pink on cream, shaded darker..... SPEA-1EL. 15¢
—**Excelsior.** Scarlet-orange, wings shaded darker..... SPEA-1EX. 15¢
—**Flagship.** Deep navy blue with darker shading..... SPEA-1F. 15¢
—**Gigantic.** (G. M.) White, black seeded; very good..... SPEA-1G. 15¢
—**Gold Crest.** Orange tinted salmon, shading darker..... SPEA-1GC. 15¢
—**Grand Slam.** Cerise-scarlet, suffused..... SPEA-1GS. 15¢
—**Mastercream.** Cream, black seeded..... SPEA-1M. 15¢
—**Mrs. A. Searles.** Bright salmon-cerise..... SPEA-1MS. 15¢
—**Mrs. R. Bolton.** (NEW) Deep almond pink, very large flowered..... SPEA-1MB. 15¢
—**Patricia Uwun.** Salmon-pink suffused gold..... SPEA-1P. 15¢
—**Pink Frills.** (Gold Medal Winner) Rich salmon-pink on cream..... SPEA-1PF. 15¢
—**Radar.** Best rich salmon-pink..... SPEA-1R. 15¢
—**Red Boy.** Pure rich crimson, long stems; vigorous..... SPEA-1RB. 15¢
—**Welcome.** Dazzling scarlet..... SPEA-1W. 15¢
—**What Joy.** Deep rich cream, white seeded..... SPEA-1WJ. 15¢
—**Youth.** White, edged rose-pink..... SPEA-1Y. 15¢
—**Formula Blend.** Hand made blend of the above named varieties..... SPEA-1XF. 15¢

PRICES: All above; Oz. 25¢; ¼ lb. 75¢; Lb. \$2.25, prepaid
—**Unrivaled Mixture.** Contains a fine selection of the largest and most attractive named varieties, including the newest novelties; this is not field grown mixture.

Ounce 25¢; 4 Ounces 70¢; Lb. \$2.00, prepaid..... SPEA. 1XR. 15¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

SWEET PEAS - THALICTRUM



RECOMMENDED GARDEN BOOKS

SEED AND POTTING COMPOSTS.

By Lawrence and Newell. Rev. 4th edition, 160 pp., 30 figs., 122mo., cloth. London, 1950. New in dust wrappers..... \$1.75

The authors are the developers of the standardized John Innes composts. Their book shows how those remarkable composts save time, reduce the hazards of raising difficult plants from seed and simplify proper potting on the seedlings or cuttings to maturity. Complete formulas and methods of preparation are given.

POPULAR ORCHID GROWING. \$1.75

This is of special interest to the amateur Orchid grower and covers the growing of these flowers completely. A more complete description will be given in the next book listing.

THE GARDEN FRAME. 184 pp., 8 pp. plates, 36 figs. in text. London (1947) \$1.50
How to start plants in the frame, wintering over, and all those problems connected with protecting plants and getting them started while the weather is still chilly.

THE A. B. C. OF BULBS AND CORMS. 246 pp., 16 pp. color plates, 20 line illus. London (1948) \$1.50. How to plant and care for bulbs; tells you when and what to plant.

AUSTRALIAN WILD FLOWERS. National Handbook No. 9, 32 pp. 23 illus. (16 in full color). Melbourne, 1944. Gives notes on garden cultivation and identification lists of 106 wild flowers. 75¢

PIONEER SEED COMPANY

Dimondale, Michigan, U. S. A.

LILIES SOLD OUT

We are sorry to now be out of the following Lilies. The dry season in Oregon this year has cut down on the growth.

Aurelian Gold Trumpets.

Skyrocket.

We wish to mention here the prices that have been charged on the Lily bulbs offered. If you have compared them with other lists you will have noted that they are considerable lower for the same sizes. and our bulbs are of the very best quality. This is all made possible by the present method of cataloging.

The Pink Narcissus offer made during the summer is now withdrawn. All the bulbs we were able to contract have been delivered and orders now being received have to be returned. This offer was an exceptionally good one.

PIONEER SEED COMPANY

Dimondale, Michigan, U. S. A.

SOME ITEMS FOR FUTURE ISSUES

Our main article for the December issue as well as the cover picture will be about George Russell, the venerable gardener of the Russell Strain of perennial Lupins. If any of our readers have met or known Mr. Russell we shall be pleased to add their remarks, in the December issue and especially any pictures.

For the cover pictures during the next few months we shall have some beautiful pictures and articles on some of the best English gardens as written up by Will Ingwersen.

EARLY or WINTER FLOWERING: This group is equally satisfactory for garden or greenhouse growing. The varieties listed are the very best for greenhouse culture and are listed under their original names. There are none better.

- American Beauty.** Rich crimson-rose, shaded deep crimson..... **SPEA-2A.** 20¢
- Annie Laurie.** Pure rose, white base; vigorous grower..... **SPEA-2AL.** 20¢
- Ball Blue Supreme.** Best clear deep blue..... **SPEA-2BS.** 20¢
- Ball Rose Supreme.** Large wavy silvery rose-pink flowers..... **SPEA-2BR.** 20¢
- Blue Boy.** Beautiful dark blue..... **SPEA-2BB.** 20¢
- Burpee Orange.** Clear orange, shaded..... **SPEA-2BO.** 20¢
- Cascade.** Best white; white seeded..... **SPEA-2C.** 20¢
- Elk's Purple.** Large reddish purple; long stems..... **SPEA-2EP.** 20¢
- Giant Pink.** Pink blended with soft rose, more intense on edges..... **SPEA-2GP.** 20¢
- Grenadier Improved.** Dazzling crimson-scarlet; vigorous..... **SPEA-2G.** 20¢
- Kate Smith.** Scarlet, suffused rose; long stems, large flowers..... **SPEA-2K.** 20¢
- Mars.** Rich deep crimson..... **SPEA-2M.** 20¢
- Mrs. H. S. Reddick.** Brilliant flesh pink suffused salmon; immense fls..... **SPEA-2R.** 20¢
- Orange King.** Glowing intense orange with crimson shadings..... **SPEA-2OK.** 20¢
- Oriental.** Deep cream; black seeded; large flowers..... **SPEA-2N.** 20¢
- Princess Blue.** Rich belledonna blue; vigorous..... **SPEA-2PB.** 20¢
- Shirley Temple.** Delightful soft rose-pink, fluted, long stems..... **SPEA-2ST.** 20¢
- Supreme Orange.** (Zvolanek's) Cerise wings, orange standards..... **SPEA-2S.** 20¢
- Twilight.** A very pretty lavender variety..... **SPEA-2T.** 20¢
- Zvolanek's Salmon.** Salmon-cerise, large flowers; robust..... **SPEA-2Z.** 20¢
- Florist Blend.** A hand made blend for the grower needing but a small amount of seed; in best proportions **PRICE: Oz. 40¢; 1/4 lb. \$1.30; 1 lb. \$3.00.** **SPEA-2FX.** 20¢
- Extra Choice Mixed.** Well balanced mixture of newest and brightest colors. Especially for garden growing **Oz. 35¢; 1/4 lb. \$1.10; 1 lb. \$2.75** **SPEA-2X.** 20¢

SPRING FLOWERING CUTHBERTSON: A new intermediate season type, whose main recommendation is heat resistance. The colors are plainer and not as good as in the Spencers. We recommend them for the South.

- Finest Mixture.**..... **Oz. 25¢; 4 Oz. 80¢; Lb. \$2.25.**..... **SPEA-3X.** 15¢

SYNTHYRIS. (SINTH-uh-riss) Scrophulariaceae.

Native N. American perennials with basal leaves and wheel-shaped 4-lobed flowers in spikes or racemes. Grown in the border.

- Hendersonii.** Sky-blue fls 1/4" long; RG; 3 inches; HP..... **SYNT-8.** 25¢

SYMPLOCOS. (sim-PLOH-kos) SWEET-LEAF. Symplocaceae.

Trees and shrubs of ornamental value. Seeds are slow to germinate.

- paniculata.** To 30 ft; deciduous; white frag. fls; fr. blue; HTR..... **SYMP-1.** 25¢

TALINUM. (tah-LY-num) FLAME FLOWER. Portulacaceae.

Many small fleshy perennials with erect clusters of pink, red or yellow flowers. Some hardy, others grown in tubs indoors during the winter.

- paniculatum.** Red to yellow fls in panicles; 2 ft; for the S..... **TALI-5.** 20¢

TARCHONANTHUS. (tar-sho-NAU-thus)

- camphoratus v. litakunsis.** Wild sage. Sh; masses of pale yellow fls seeds in cottony ball; very attractive; S. Rhodesia; for South..... **TARC-1.** 25¢

TAXODIUM. (tax-OH-dee-um) BALD CYPRESS. Taxodiaceae.

Trees with needle-like lvs; fls in catkins. Ask for bulk prices if interested.

- distichum.** Deciduous, hardy in the North..... **TAXO-2.** 25¢

TELEKIA: see **BUPHTHALMUM.**

TEPHROSIA. (tef-ROH-se-ah) (Crocca) Leguminosae.

Plants or shrubs, red, purple or white fls in racemes, followed by flat pods.

- candida.** Sh. to 10 ft; white fls 1" long; pods 4 in; India..... **TEPH-1.** 25¢

THALICTRUM. (thal-LIK-trum) MEADOW RUE. Ranunculaceae.

Perennial plants with flowers in panicles or racemes, with out petals but with numerous drooping stamens. Some are attractive in masses in the border, others in the wild garden. They are easy to grow, thriving in any well drained loamy soil.

- adiantifolium.** (T. minus) Greenish yellow; fine cut fol; 18"; HP..... **THAL-1.** 15¢
- aquilegifolium.** Dainty, pretty, fluffy white or cream fls; 3 ft; HP..... **THAL-5.** 25¢
- dipterocarpum.** Rose-mauve with drooping golden stamens; 4 ft; HP..... **THAL-14.** 15¢
- Thalictrum Mixed.** All kinds listed..... **THAL-X.** 15¢

THLASPI. (THLASP-ee) PENNY CRESS. Cruciferae.

Annuals and perennials, hardy in the North, with white, rose or purplish flowers in the rocky, others for their large flat ornamental pods; easy to grow.

- praecox.** (Jankia) White fls; 1 ft; basal lvs in rosettes; HP..... **THLA-12(C).** 30¢

THERMOPSIS. (ther-MOP-sis) Leguminosae.

Easily grown perennials in open sunny positions. The flowers are lupin-like, in racemes. Sow seeds in fall or spring over heat. Useful in the border.

- caroliniana.** Yellow fls erect terminal racemes; N. C.- Ga; 5 ft; HHP.... **THER-1.** 20¢

TETRAPANAX. (tet-RA-pan-ax) Araliaceae.

Shrubs or small trees native of warm regions; used for the making of rice paper.

- papyrifera.** Grown in the South; fls in umbels..... **TETR-1.** 25¢

THEA. (THEE-ah) Theaceae.

Evergreen trees and shrubs, showy white or pink nodding flowers. Hardy only in S.

- sinensis.** TEA. Sh to 20 ft; lvs are tea of commerce; hardy in S..... **THEA-4.** 25¢

SEMPERVIVUM. (sem-per-VY-vum) HOUSE-LEEK. Crassulaceae.

Succulent plants or sub-shrubs with thick fleshy leaves and very much like the Sedums. Flowers are in dense heads, white, pink; greenish, yellow or purple. They are excellent for the rocky and thrive in sandy soils, sunny dry positions. The tender sorts make excellent house plants. All easily grown from seed sown like any perennial.

- caespitosum.** (Aeonium c.) Tender sh; lovely golden fls..... **SEMP-16.** 30¢

This seed list continues from page to page and from issue to issue and runs alphabetically.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

DAFFODIL BULBS

KING ALFRED. One of the finest of all the Yellow Trumpets; excellent for both forcing or the garden; large trumpets, a golden yellow and deeply frilled.
3 large bulbs, 30¢; Doz. \$1.00; 100, \$8.00

HELIOS. Deep golden yellow perianth, semi overlapping, cup opens a little darker than the petals and in a cool climate gradually changes to a light orange.
Large bulbs: 15¢; doz. \$1.00; 100 \$8.00

DAISY SCHAFFER. One of the best of the new Giant Leedsii type, the flowers are 4½ inches across with cups nearly 2 inches resembling a Giant Trumpet but much more graceful in form; perianth white with cup opening primrose and turning to light canary-yellow, deeper at the base; long lemon-yellow stigma and styles add to the color harmony of this remarkable flower.
Each; 25¢; doz. \$1.75; small planting size, \$8.00 per 100.

SCARLET ELEGANCE. One of the first to bloom in the garden; has a deeply color-scarlet crown; perianth deep yellow; very fine for cut flowers;
Each: 20¢; doz. \$1.25; 100 \$9.00.

TWINK. Charming pale primrose flushed white, center deep orange-red; it is an easily grown variety and excellent in every way and probably best of the double Narcissus.
EACH 20¢; dozen \$1.50; 100, \$11.00

CHEERFULNESS. A double form of Elvir-a, creamy white perianth with a full double center of pale yellow; a Tazetta Narcissus; strong grower.
Each, 20¢; dozen \$1.00; 100, \$8.00

GERANIUM. A beautiful Poetaz hybrid with heads of 4-6 flowers per stem, with broad pure white petals of solid substance; a bright orange cup; an effective late variety for the border or forcing after middle of February.
Each, 20¢; dozen \$1.10; 100, \$8.50

REMBRANDT. A very early large golden yellow trumpet of lovely carriage; petals are flat, broad and somewhat pointed and a large expanded trumpet, nicely flanged at mouth; showy variety for both the garden or for pots; a vigorous grower.
Each, 20¢; dozen \$1.30; 100, \$9.00

FEBRUARY GOLD. A Poeticus Narcissus with lovely golden yellow trumpets. It should be planted in the rockery for a very early display for it blooms first of all the varieties we have grown.
Each, 15¢; dozen \$1.00; 100, \$9.00

NOTE: 3 bulbs of a kind at the dozen rate and 25 of the same variety at the 100 rate.

SPECIAL COLLECTION: One large Bulb of each of the above nine varieties for \$1.50, postpaid; 3 each for \$3.50; post paid.
Each: 20¢; dozen \$1.50; 100, \$9.00

PLANTING SIZE NARCISSUS. Small size bulbs that will produce large bulbs next year; 25 of a kind at the 100 rate; no less than 100 sold. Prepaid.

KING ALFRED	\$5.00
REMBRANDT	6.00
SCARLET ELEGANCE	5.00
CHEERFULNESS	4.50
GERANIUM	4.00

PIONEER SEED COMPANY
DIMONDALE, MICHIGAN

DRY PINE CONES

Dry empty cones for ornamental use
Price per Bushel:
LODGEPOLE PINE\$2.00
PONDEROSA PINE\$1.75
BLACK SPRUCE\$2.50
YUCCA PODS\$1.75

PIONEER SEED COMPANY
Dimondale - Michigan.

THUJA - TILIA - TORENIA

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

THUJA. (THEW-juh) ARBOR-VITAE, CEDAR. Pinaceae.

The following can be grown from seeds. Write for prices in bulk if you use quantity.

—occidentalis. American Arborvitae	THUJ-3. 25¢
—aurea. Bushy, yellow foliage	THUJ-3A. 25¢
—pyramidalis. Pyramidal growth	THUJ-3P. 25¢
—Warrana. (T. robustus) Lower and more dense growth than type	THUJ-W. 25¢
—orientalis. Oriental A. Leaves bright green; China, Korea	THUJ-4. 25¢
—New England grown seed	THUJ-4NE. 25¢
—aurea. Golden yellow foliage in spring	THUJ-4A. 25¢
—compacta. (Sieboldii) Low and globose	THUJ-4C. 25¢
—pyramidalis. (tatarica) Branchlets yellow tipped	THUJ-4T. 25¢
—plicata. Giant Arbor Vitae. Tree to 200 ft.	THUJ-5. 25¢
—Standishii. Japanese Arbor Vitae. To 50 ft; Japan	THUJ-6. 25¢

THUJOPSIS. (thew-JOPP-siss) Pinaceae.

Evergreen trees allied to Thuja, native of Japan.
—dolobrata. Hiba Arbor Vitae. Hardy in Ohio. THUO-1. 25¢

THUNBERGIA. (thun-BURJ-ee-ah) CLOCK VINE. Acanthaceae.

Tender climbers from tropical regions and grown in the greenhouse to be set out doors during the summer. They can be planted outdoors in the South; start seeds early in February or March.

—fragrans. Slender GH climber with white fragrant fls 2" across. THUN-5. 25¢

THYMOPHYLLA. (tye-moh-FILL-uh) DAHLBERG DAISY. Compositae.

Low annuals and perennials from the South and Central America. Grow as annual N.

—tenuiloba. Excellent bedder; 1 ft; blooms in 4 mo; full sun. THPH-1. 20¢

THYMUS. (TYE-mus) THYME. Labiatae.

Aromatic plants with a profusion of small flowers. They all like sunny dry locations and are easily grown from seed. Liable to winter kill in heavy soils.

—Serpyllum. Prostrate sub-shrub; fls purplish; HP. THYM-23. 25¢
—lanuginosus. Grayish foliage. THYM-23L. 25¢

TILIA. (TILL-ee-uh) BASSWOOD, LINDEN, LIME. Tiliaceae.

Sow seeds in fall or stratify. They thrive in any soil so long as it does not dry out too much in the summer. Write for bulk prices if interested.

—americana. American L. N. B. to Mo; 100 ft.	TILI-1. 25¢
—cordata. Small leaved Linden; to 100 ft; Europe.	TILI-2. 25¢
—europaea. Hybrid; excellent street tree.	TILI-6. 25¢
—platyphyllos. Large Leaf L. To 100 ft.	TILI-20. 25¢
—tomentosa. White or Silver Linden. To 100 ft; E. Eu. Asia Minor.	TILI-21. 25¢

TINNEA. (tin-NEE-ah) Labiatae.

Herbaceous or somewhat woody plants with whorls of 2-lipped tubular purple flowers They are tender in the North.

—abysinnica. Purple-brown fls; interesting bladder-like pods; TSh. TINN-1. 25¢

TITHONIA. (ti-THOH-ne-ah) MEXICAN SUNFLOWER. Compositae.

Robust growing plants from Mexico. They are tender annuals in the North; start the seed early and transplant outdoors when frost danger is passed.

T. ROTUNDIFOLIA: (T. speciosa)

—TOUCH. The new G. M. Winner; orange-red; 3 ft; (see pg. 28)	TITH-2T. 25¢
—Fireball. Brilliant scarlet; 6 ft.	TITH-2F. 15¢
—Orange Vermilion. Glistening scarlet like large single Dahlias.	TITH-2V. 15¢
—Mixed. Many shades of color, all beautiful.	TITH-X. 15¢

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber,

TORENIA. (toh-REEN-ee-uh) Scrophulariaceae.

Florida Pansies. Tropical perennials grown in the greenhouse or as annuals in the North. In Florida they are used as substitutes for Pansies. The flowers are 2-lipped and much like Gloxinias; shady places, a rich soil best.

—Fournieri. Rich blue with golden centers; pots, beds; 9"; *TP. TORE-4. 20¢
—alba compacta. Dense habit; white corolla, yellow blotch; 9"; *TP. TORE-4A. 25¢

TOWNSENDIA. (toun-SEN-de-ah) Compositae.

Biennial and perennials closely resembling Aster, s in white, rose to violet, with rays. Not commonly grown but fine for the rockery.

—excarpa. Stemless, 1" tall; mauve with yellow disk; RG; pretty; HP. TOWN-1. 25¢

TRACHELOSPERMUM. (trak-el-oh-SPERM-um) Apocynaceae.

Twining evergreen vines. Suitable for the South.

—fragrans. White fls; pots 9" long; tall climber; TP. TRAC-3. 25¢

TRADESCANTIA. (trad-es-KANT-ee-ah) SPIDERWORT. Commelinaceae.

Perennials with blue, rose, purple and white flowers in umbels and they are grown indoors, or in baskets or in the border; easily grown.

—Beauty Blend. Hardy species; 3 ft; HP. TRAD-X. 15¢

TRIFOLIUM. (trye-FOH-lee-um) CLOVER. Leguminosae.

We list here only those of ornamental value.

—repens. SHAMROCK. This and Oxalis acetoselia said to be S; HP. TRIF-20. 20¢
—v. atropurpureum. Deep bronze red with green margins lvs; HP. TRIF-20P. 20¢

TRIPTERIS. (TRIP-ter-is) Compositae.

South African plants or shrubs, not hardy in the North. Flowers are daisy-like. both ray and disk flowers. Plant early in the spring.

—hyseroides. Golden yellow fls, black disk; pretty; 2 ft; HA. TRIP-1. 20¢
—alpinum. Red fls in loose heads; 4"; HP. TRIP-4(C). 25¢

NOTE: It is our intention that these seed lists be correct, both as to classification and to descriptions. We use Hortus II as our authority. If any of our readers note a mistake, we will certainly deem it a favor if it is pointed out to us.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

An Adventure in Growing Crinums

Perhaps I should label this, "Adventures with Crinums." The word "adventure" well describes the activities of a plant lover in pursuit of his favorite occupation. The word Crinum comes from the Greek word *krinon*, meaning lily, but from the time of Carl Linnaeus, it has been known that they are Amaryliads, and not Lilies. Due to the lily-like form and appearance, to many they are still Crinum Lilies.

The first time I ever saw or even heard of a Crinum was about 50 years ago. One of my university professors, Dr. S. Williston, a very famous biologist and then at Kansas University, learning of my interest in bulbs, invited me to his home and gave me two bulbs of Crinum Moorei.

Later, when we had moved to California in 1905, I saw some large bulbous plants in many yards. For some time I wondered what they were. I finally decided they were Crinums. I had already gotten a few; they were mostly what were then called C. capense, later C. longifolia, but now C. bulbisperrum. Others were C. Moorei.

In 1910 I imported two varieties of C. Powellii; a little later I tried to cross C. bulbisperrum with Amaryllis Johnsonii and found what I should already have known, that such a cross is impossible. In about 1912 I placed pollen of C. Moorei on the stigmas of C. bulbisperrum flowers. This was the reciprocal of the cross which produced C. Powellii, as in this, the seed parent was C. bulbisperrum, and C. Moorei was the seed parent used to produce the C. Powellii varieties. From this cross, about 600 seedlings were produced, one of which became C. Cecil Houdyshel. From its seed parent, it inherited the trait of blooming thruout the spring, summer and fall, a trait not possessed by the Powellii varieties.

Luther Burbank's Hybrids

In 1910-11, I was principal of Carson City High School and the following year, Supt. of Schools at Virginia City, Nevada. On trips back to my home in Pomona, I frequently visited Luther Burbank at Santa Rosa. He had a very, thick row of Crinums which he called Burbank Hybrids, but they appeared to be identical. I brought home several bulbs and after Mr. Burbank's death, this Crinum was introduced by a former employee as White Queen, a name it richly deserves.

About 1914, after moving to our present La Verne ranch, I advertised J. C. Harvey in the Los Angeles Times garden magazine and received an inquiry from Mr. Edmund Sturtevant of Hollywood who told me he had known the old pioneer California horticulturist, J. C. Harvey, and would like to get a bulb of his Crinum. I replied by sending him the largest bulb I could find, gratis; I was then invited to visit him and see his Crinums, which of course I did.

Mr. Sturtevant, I found, was a very old and frail man. He had a beautiful home and large grounds and had gained much fame as a grower and breeder of Water Lilies in the East and Crinums were only a hobby. I received from him, several of his hybrids and one, a cross of C. Asiaticum x C. Moorei proved to be a most valuable hybrid, which I later named C. Edmund Sturtevant. This Crinum is described and illustrated on pages 257-259 of Vol. II, 1944 Herbertia. One of his former employees had also placed his own name on an identical hybrid.

Probably in the 20's I raised a hybrid which was named Virginia Lee when intro-

By Cecil Houdyshel

duced. I have not always kept a written record of crosses and when done they may be lost. If my memory is correct the seed parent was C. Cecil Houdyshel and the pollen parent, J. C. Harvey. So far as I know this was the first cross ever made between two hybrids as hybrid Crinums are usually sterile. This Crinum contains C. Moorei in its ancestry on both sides and strongly resembles C. Moorei except in the shape of its flowers. The flowers are definitely not companionate like those of C. Moorei.

First Hybrid to Seed

This hybrid is the first that bears seed freely and this fact raised my hopes. Here I had a cross between two hybrids, probably the first ever made, and it produced abundant crops of seed every year.

Pollen from Ellen Bousanquet, and from

every hybrid available, was used. The flowers were first emasculated before their pollen ripened; always seeds were set and ripened. These were planted and grown to flowering size; their seed cross-pollinated and raised. At least four generations of seedlings descended from C. Virginia Lee but her great-great-grand children are still Virginia Lees with variations in color which in no way resemble the color of their pollen parent. A white one was named Gordon Wayne. It

C. Gordon Wayne Crinum

is evident that this Crinum cannot be crossed. When emasculated and other pollen used, the only effect is to stimulate parthenogenetic reproduction, a phenomenon not unknown among plants.

My hope was for a race of Crinum hybrids that bore seed freely and crossed easily. In that way, the breeding of Crinums would soon result in great improvements.

This was a great disappointment; for many years, I puit breeding them.

Last year, since C. Cecil Houdyshel bears a few seed, I pollinated a few flowers by C. Yemense, a large white; one seed only resulted. I am growing this in the greenhouse in order to get continual, year around growth. This year have crossed Cecil Houdyshel with a deep wine-red hybrid; whether results be the same as with the Virginia Lee seedlings, no one knows.

One thing to remember is that they are stream-side plants and have been distributed all over the world by streams and ocean currents. They like stream sides and enough moisture. They like the shade of trees and C. Moorei must have nearly tall shade. They like good drainage and an acid soil; in alkaline soils, some varieties become chlorotic and finally may die. This is probably not a mosaic disease as I first supposed but rather a food deficiency. Very likely some of the food salts they need do not ionize in an alkaline solution. The remedy is to plant the less tolerant kinds

in soil made acid by the addition of a large quantity of sphagnum moss, peat or oak leaf mould.

If the soil be sandy, it will also help. I have lost a number of fine plants because of alkaline soil. Among these, most of our C. Edmund Sturtevant, and again by a freeze when some of those remaining were killed along with most of our White Queen in storage trays out doors.

I had long known that Crinum seed should be planted on top of the ground. Seed of Clivias, Nerines, Brunsvigias, Haemanthus and others of a turgid nature also do better planted thus. These seed possess photosynthesis, similar to that of foliage and need light. This was discovered by a student at Brigham Young University.

From my point of view, every amateur gardener should experiment in breeding plants. One English clock maker made his

Continued on Page 152



The Purple Fringe Bush

George Russell

Passes Away

We are very sorry to hear in today's mail of the death of George Russell. Mr. Russell will be known for his improvement of the Lupin and it was our intention to have his picture and something on his work for our December issue.

Mr. Russell was a plain gardener, very reserved, and very devoted to his work.

Many, many thousands of flower growers have planted and grown the Russell strain of the perennial Lupin, but I am afraid only a very few ever knew of the originator of the beautiful Russell Lupin. It was our special wish to give space to this wonderful man, and when he was alive. We have pictures now in the mail, which we shall publish

Continued on Page 156

Cold Stratification of Tree and Shrub Seeds

In this issue and during the fall months, seeds of woody plants, (shrubs and trees) are in order. The handling of this class of seed usually is different than growing Petunias or Marigolds and many a purchase has been made of shrub and trees seed which we would not be surprised, never produced a seedling, all due to the lack of experience and knowledge on the part of the purchaser.

A few years ago we had many wholesale orders from a firm, for Ilex seed. To germinate this type of seed, requires much more than merely covering up the seed in a seed flat. We doubt if there were many seedlings grown from all this seed.

Now, it would be impossible for any seed firm to go to the expense of printing detailed instructions for each species. To give cultural direction on the common flowers such as Pansy, Calliopsis, etc., is a simple matter. To do so on Lilies still would not be so difficult but in the case of woody plants and all of the alpine flowers, orchids and many others, the instructions could run into books.

Germination Problems to be Discussed

All these problems will be discussed in our columns, in issue after issue, and the articles will be timed to meet the questions most likely to be raised, as different problems present themselves.

Many seeds, especially in shrubs and trees, have a dormant period, when it is impossible to get them to germinate. One must know how to overcome these problems if he expects to get germination satisfactory.

Different species, even, will require a different treatment and much of this variation is caused by the different climates where the species originally originated.

Usually, nature ripens the seed late in the season and as it is best that nothing should happen to cause the seed to germinate before spring, there has been an internal dormancy established, thus delaying germination till the spring, when they come to life.

The easiest method to overcome this dormancy is by what is called cold stratification, which simply copies nature's way, by keeping the seed moist and at winter temperature for a short period, and then when brot to warmth germination starts without delay.

Dormancy in Tree and Shrub Seeds

Tree and shrub seeds are generally collected from wild or forest plants, that is they are not grown on seed farms and usually the seed is not ready to harvest till late summer or autumn. By the time they are cleaned and dried, it is winter and thus delivery to the actual grower run into the winter months. Therefore if the seed is stored in a dry place till spring and then sown the germination will in many cases be as low as 10%. But if the seed is left undisturbed it will give a good germination the following year. It is because of this year delay that a cold stratification treatment is recommended and practiced by regular growers.

Cold stratification is merely the storing of the seed in some moist medium and then stored at a temperature of a little over 32 degrees Far. for from 30 to 120 days, according to the particular seed.

The various mediums used are sand, milled sphagnum moss and a granular peat. The sand is the most commonly used and must be clean sand; if it has any dirt, it should be washed. The amount used varies from 1-3 times the volume of the seed and should be sufficient to surround all the seed and to

Continued on Page 147

RARE SHRUBS AND TREES

....We list below a part of our spring offering in RARE and HARD-TO-FIND TREES and SHRUBS, each one a gem in any ornamental planting. In following issues these will be continued....The prices cannot be definitely marked at this time as the bulk of the offerings are imported and much will depend upon import restrictions which will have to be worked out during the winter. However, we believe these plants can be sold so that the price will range between \$1.00 and \$2.00; in all cases the shipments are FOB here, the express or postage will be extra, but there is no charge for packing.

HOW TO ORDER: We would like to know as soon as possible just what our customers are interested in and therefore we will accept reservations now and will notify you later as to the actual import restrictions and the price, at which time you may definitely order or cancel any or all of your reservation. It will be necessary, however, to place your order before the first of the year. Because time will be required to assemble the great number of different stocks, pack and get them shipped in time to be here and thru the inspection and still have them in the hands of our customer early in the spring. **SIZE:** It will be necessary to import in the smaller sizes mainly on account of costs in large sizes, but more so in that most of the rarer types of shrubs and trees can only be had in the small sizes....We will try to give all this information in later lists.... May we also call your attention to the limited amount of these plants that will be available. It actually is limited and it is very important to reserve what you would like to have. **DO THIS NOW, PLEASE.** It will not be necessary to remit.

ABELIOPHYLLUM. A slow growing shrub from Korea and related to the Forsythia. —*distichum*. Flowers white, tinged pink, fragrant, opening in February.

ABUTILON megapotamicum. (vexillarium). Conspicuous flowers having red calyx, yellow petals and brown anthers; suitable for a warm wall; tender.

—*variegatum*. Leaves white mottled, golden variegation.

—*Milleri*. Flowers bell-shaped, orange, with crimson stamens; leaves dark green, mottled yellow; continuous flowering.

—*vitifolium*. Very handsome, tall, Chilean shrub, needing a sunny sheltered site; flowers Mallow-like, pale to deep mauve.

ACANTHOPANAX. Shrubs or trees with handsome foliage, related to Aralia.

—*spinocus*. An elegant shrub up to 10 ft high; fruits are black.

ACRADENIA. Tender small evergreen Tasmanian shrub, moderately hardy.

—*Frankliniae*. Leaves dark green, trifoliate, flowers white, borne in May in terminal flat clusters.

ALBIZZIA. Deciduous, mimosa-like shrubs or small trees valuable for their pretty foliage and attractive flowers.

—*Julibrissin*. The hardest species; flower heads pink, produced in summer; withstands severe frost.

—*uopantha*. A shrub or small trees with beautiful foliage and yellowish flowers in spring; only suitable for the far South.

AMELANCHIER. The "Snowy Mespilus" or "June Berry"; a beautiful genus of very hardy small trees or shrubs, thriving in any ordinary soil; the abundant racemes of white flowers are produced in spring before the leaves are fully developed; foliage often richly colored in the autumn.

—*alnifolia*. A shrubby species with densely pubescent leaves.

—*asiatica*. An elegant small tree flowering in May and intermittently over long period.

—*nanadensis*. A medium sized tree; the numerous white flowers are followed by maroon-purple fruits in June.

—*grandiflora*. A hybrid between *nanadensis* and *laevis*.

—*laevis*. Small tree distinguished by its purplish young foliage and drooping racemes.

—*oblongifolia*. Tall shrub with erect stems, or small tree, very free flowering and coloring well in the autumn.

—*spirata*. Bushy shrub to 12 ft. high; fruits bluish black.

—*stolonifera*. Spreading, shrubby species about 4 ft. high.

ARISTOTELIA. Following two species are native of New Zealand.

—*fruticosa*. An extraordinary variable shrub; leathery leaves, varying from linear to oblong-obovate.

—*racemosa*. A graceful small tree suitable for mild places.

ARTEMISIA. Aromatic shrubs with attractive foliage.

—*Abrotanum*. The "Southernwood" or "Lad's Love" of cottage gardens.

—*arborescens*. The billowy filigree of its silvery leaves make this a charming subject for the gray or blue border.

BUDLEIA. A genus including several species of the greatest garden value thriving in almost any soil and reveling in full sun. The flowering period is July to September unless otherwise stated.

—*alternifolia*. Graceful, small-leaved shrub with long arching branches wreathed in early summer with delicate lilac, fragrant flowers.

—*asiatica*. Dainty, cool greenhouse plant, bearing panicles of white, fragrant flowers during winter.

—*auriculata*. Produces small panicles of sweetly scented, white flowers in autumn; a good shrub for a sunny wall.

—*candida*. Distinguished by flannelly, whitish leaves and small racemes of violet fls.

—*caryopteridifolia*. This seems to be the hardest of a small group of spring flowering species; the fragrant, lilac-colored flowers are borne in the panicles on previous year's shoots; leaves and young growth clothed with white tomentum.

—*Colvillei*. June flowering, Himalayan species; the large rose colored flowers are produced on old wood; while tender as a young plant, mature specimens have withstood zero frosts.

—*kewensis*. A form with rich red flowers.

—*crispa*. Leaves and stems white-felted; flowers in ovoid, terminal panicles, lilac with orange throat.

—*Davidii*. This species gives the best results when given hard pruning each spring; the flowers are very attractive to butterflies; it does well too near the sea.

—*amplissima*. Huge panicles of deep mauve flowers.

—*Ile de France*. Flowers rich purple-blue.

—*Pink Pearl*. Dense panicles pale lilac with soft yellow reverse.

—*Prince Charming*. A fine new pink variety.

—*Fallowiana*. Foliage silvery, flowers very fragrant, pale lavender-blue; large panicles.

—*alba*. Choice shrub with white flowers and orange eye.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

RARE SHRUBS AND TREES

- Farrerii**. Leaves white-felted, large and handsome; flowers fragrant, lilac; April.
- Forrestii**. Leaves covered with reddish-brown down, beneath; inflorescence cylindrical; flowers fragrant, varying from pale lilac to reddish maroon.
- globosa**. The Chilean "Orange Ball Tree"; a striking tall shrub when in May laden with orange-yellow, ball-like inflorescences.
- japonica**. A Japanese shrub of arching habit with drooping racemes of pale lilac.
- Lindleyana**. Long slender racemes of long curved purplish violet flowers.
- madagascariensis**. Yellow flowers in long panicles during winter; tender.
- myriantha**. Leaves lanceolate, covered beneath with white felt; flowers in long slender panicles; an elegant grey shrub.

BUPLEURUM fruticosum. On of the best shrubs for exposed places near the sea and limey soils; also for planting under trees; foliage bright green; flowers yellow; July.

CALOPHACA wolgarica. A prostrate shrub bearing yellow, pea-shaped flowers in June and July; needs full sun.

CALYCANTHUS fertilis. "Allspice"; flowers brown-crimson through summer.

CARYOPTERIS. Small verbena-like shrubs with grey aromatic leaves, best in full sun. —**clandonensis**. (Mastacanthus x mongolica) This vigorous hybrid thrives almost anywhere, producing its bright blue flowers in August and September.

An ideal subject for mass effect and can be kept to a height of about 2½ ft. —**Mastacanthus**. An erect shrub up to 5 ft high; flowers violet-blue, opening in Sept. —**mongolica**. Distinct in its dwarf habit, narrow leaves and comparatively large rich —**mongolica**. Distinct in its dwarf habit, narrow leaves and large rich blue flowers.

CASSIA corymbosa. Very handsome wall shrub with pinnate leaves; flowers large rich yellow, in terminal clusters during late summer; needs very warm site; tender. —**marylandica**. A semi-woody plant; flowers in racemes, yellow with purple anthers.

CERATOSTIGMA. The "Plumbagos" are favorites on account of their blue flowers. —**Griffithii**. A beautiful Himalayan species, only suitable for mild districts; leaves color well in the autumn.

—**Willmottianum**. Forms a shrub of about 3 ft in height; the rich blue flowers appear in July and continue until autumn; suitable for either shrubbery or herbaceous border.

CERCIDIPHYLLUM japonicum. Forms a small, round-headed tree, assuming rich autumnal colors in favorable seasons.

CHIONANTHUS refusa. "Chinese Fringe Tree"; a choice shrub, bearing pure white flowers in profusion in June and July.

CHORDOSPARTIUM Stevensonii. An exceedingly rare N. Zealand broom-like, leafless shrub, bearing racemes of lilac flowers; resembles in habit a small weeping willow.

CLETHRA. Shrubs requiring a lime-free soil, flowering in late summer and notable for their fragrance; all have white flowers in long racemes or panicles.

—**arborea**. A magnificent tall shrub with Lily-of-the-Valley-like flowers; only suitable for the mildest sections.

COLLETIA. Interesting and curious shrubs with green, polymorphic, leaf-like stems; foliage scanty, sometimes absent; flowers small, ivory-white.

—**armata**. Branches with long, stout spines.

—**cruciata**. (bictoniensis) Branches rigid, with large, triangular, compressed spines.

CORARIA. Shrubs characterised by the frond-like arrangement of their leaves and and showy fruits.

—**terminalis**. Handsome sub-shrub from Sikkim and China; fruits black or translucent

—**nepalensis**. A low spreading shrub with black-purple fruits; foliage tinted in fall.

CORNUS. The Dogwoods listed below are those that are not commonly found grown in this country.

—**alternifolia argentea**. One of the very best of variegated shrubs; small plants.

—**capitata**. Tender, evergreen species suitable for mild sections; beautiful small tree; flower heads surrounded by sulphur-yellow bracts, followed by large, strawberry fruits.

—**dubia**. A rare hybrid between C. paucinervis and Amomum.

—**Kousa**. Elegant tall shrub; the numerous flowers of which the white bracts are the conspicuous part, are poised on slender erect stalks on the horizontal branches.

—**macrophylla**. Large leaved tree up to 30 ft. high; flowers creamy white in 4-6" heads.

—**mas**. The Cornelian Cherry; a shrub or small tree producing an abundance of small yellow flowers in February; berries ¾ inch long, bright red.

—**aurea**. Leaves suffused yellow.

—**variegata**. Leaves margined white.

—**officinalis**. Rare Korean species, similar to C. mas with yellow flowers; red fruits.

CORYLOPSIS. A group of very pretty, early spring flowering shrubs related to the Witch Hazel, but bearing their cup-shaped, primrose-yellow, fragrant flowers in drooping racemes.

—**glabrescens**. (Gotoana) A tall growing Japanese species.

—**pauciflora**. Densely branched shrub, not above 4 ft, exceedingly free-flowering and cow-slip scented.

—**sisensis**. Tall shrub distinguished by its many-flowered racemes.

—**spicata**. A spreading shrub up to 6 ft. high; leaves roundish, leathery and glaucous; flowers are bright yellow.

—**Willmottiae**. An elegant shrub to 12 ft. with soft yellow, very fragrant flowers in long racemes.

NOTE: This list will continue in next issue; if you are interested in any of these rare shrubs and trees, reserve your wants NOW; send no money, we will advise later as to prices and delivery at which time you can either cancel or confirm.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

ERYTHRINA INDICA VAR. ALBA

This is the rare white flowered form of the spreading, deciduous, thorny Indian shade tree that is considerably planted in South Florida. Some related red-flowered species are planted in Southern California.

By E. A. Menninger

OMPHALODES LINIFOLIA

A charming little annual Borage, six to 12 inches high with cold white flowers sometimes tinged with blue.

It flowers from June to August, is very free flowering and pleasing.

PENSTEMONS IN CALIFORNIA

One grower reports from California that *Penstemon aridus*, *Purdyi*, *Blue Bedder*, *Barrettii*, *Cardwellii*, *Crandalli*, *Davidsoni*, *Menziesi* and *Menziesi serophyllum* are the best behaved *Penstemons* in her garden.

Others report that *P. rupicola* is a fine species with its mounds of silvery foliage surmounted by carmine-rose flowers.

However, another California grower reports *P. cyananthus*, *confertus*, *Crandalli*, *caelestinus* as good but gives up growing *P. rupicola*, *Menziesi*, *Davidsoni* and *Cardwellii*; so one can see much depends upon the particular grower, his desires and his growing conditions.

HARDY TROPICAL PLANTS

There are many ornamental plants native of the tropical regions that are hardy in the temperate zone. The reason for this is that they grow at high elevations in the tropics and thus have a similar climate so far as temperature is concerned, as if they grew farther north.

I would imagine that most plants belonging to this classification would be sun loving plants, because of the direct sun light in the tropics. Can some of our readers enlarge on this?

COLD STRATIFICATION OF SEEDS

Continued from Page 145

keep it moist. In some cases the peat or sphagnum has been found better. Some seeds do best when the medium has some acid reaction.

The temperature should be just above freezing and a real low temperature is not necessary, in fact in some cases even harmful. Of course the container should be such as to hold the moisture and not allow it to decrease. The medium should be just moist and moist clear thru, too. In the bottom of the container a false bottom should be made so as to hold the seed up out of any surplus water that may drain from the medium.

When seed is received early enough in the fall so that it can be sown, the winter treatment in the seed bed will save the stratification treatment but there are advantages in the spring planting. Loss from rodents is an important one and much work to keep them out of the seed bed can be saved. A good stirring of the soil can also be made in the spring as well as winter damaged that can come from so many different sources.

Some of the woody plants that require this treatment are: the Firs, Maples, *Ailanthus*, *Alnus*, *Amelanchier*, *Aralia*, *Aronia* or *Chokeberry*, *Paw Paw*, *Barberry*, *Birch*, *Carpinus*, *Ceanothus*, *Bittersweet*, *Celtis* or *Hackberry*, *Cercis canadensis*, *Clematis*, and best probably on all the woody species, *Cornus* or *Dogwood*, *Corylus*, *Cotoneaster*, and *Crataegus* or *Hawthorne* (peat).

Erongmus, *Beech*, *Fremontia*, *Gaultheria*, *Helesia*, *Hamamelis* or *Witch Hazel*, *Juniperus*, *Larch*, *Ligustrum* or *Privet* (sand or peat) *Lindera Benzoin*, *Liquidambar* or *Sweet Gum*, *Liriodendron* or *Yellow Popular* (peat) *Magnolia*, *Malus* or *Apple*, *Mulberry*, *Myrica* or *Southern Waxmyrtle* (acid peat), *Tupelo*, *Picea*, *Pines*, *Prunus* or *Plums*, *Rhamnus* or *Buckthorn*, *Ribes*, *Rosa blanda* and probably all rose species, *Sapindus* or *Western Soapberry*, *Sassafras*, *Sequoia*, *Shepherdia*, *Lilac*, *Tilia* or *Basswood*, *Ulmus* or *Elm* and *Viburnum*. Of course there are a great many more and we will try to get this information into all the seed listings in the future. The change in the form of cataloging will do this better and is one of the main reasons for the change.



THE LATEST LIST OF TREE AND SHRUB SEEDS

Juniperus continued from Page 138				
vulgare	.25	2.50		
virginiana, Southern, clean	.45	4.53		
— Platte River, db	.35	3.25		
— clean and floated; 90 %	.70	7.00		
— Wisconsin; cl. and floated	.60	5.75		
— glauca, clean	.70	7.00		
KALMIA (KAL-mee-ah) Mt. Laurel				
latifolia	2.00			
— New England seed	3.25			
KERRIA (KEHR-ree-ah)				
japonica	.65	6.00		
KETELEERIA (ket-el-LEER-ee-ah)				
fortunei	.40	4.00		
KOELREUTERIA (kel-roo-TEER-ee-ah)				
paniculata	.25	2.50		
KOLKWITZIA (kol-KWITS-ee-ah)				
amabilis, clean, NE	2.50			
LABURNUM (lab-BURN-um)				
alpinum	.25	2.50		
*pachyphloea, clean	.85	8.00		
rigida, clean	.60	5.50		
scopulorum, clean	.60	6.50		
— dainty lv'd S'ern form, clean	.75	7.00		
watereri (alpinum x vulgare)	2.50			
LAGERSTROEMIA (lay-gur-STREEM-ee-ah)				
indica	.55	5.50		
LARIX (LAR-ix) Larch				
europaea Central Alps, 3,000 el.	.65	6.00		
— Southern Alps, 900-1,200 el.	.45	4.50		
leptolepis	.90	6.50		
occidentalis	1.25	11.00		
LAURUS (LAW-rus) Laurel				
nobilis, clean	.25	2.25		
LESPEDEZA (les-ped-DEEZ-ah)				
bicolor	.45	4.50		
formosa	.40	4.00		
LEUCOTHOE (lew-KOTH-oh-ee)				
catesbaei	1.50	4.00		
LIBOCEDRUS (lye-boh-SEED-rus)				
decurrens	.30	3.00		
LIGUSTRUM (lig-GUST-rum) Privet				
amurense, db	.30	2.75		
ibota, db	.25	2.25		
japonicum, clean	.30	3.00		
lucidum, db	.30	2.75		
sinense "(South" Privet) clean	.75	2.50		
vulgare, db	.25	2.00		
LIQUIDAMBAR (lik-wid-AM-ber)				
styraciflua	.50	5.00		
LIPPIA (LIP-ee-ah)				
citriodora	2.50			
LIRIODENDRON (lihr-ee-oh-DEN-dron)				
tulifera	.25	2.00		
chinensis Latania borbonica	.40	4.00		
LIVISTONA (liv-ist-TOH-nuh)				
chinensis (Latania borbonica)	.40	4.00		
LONICERA (lon-NISS-er-ah) Honeysuckle				
alipigena db	.35	3.50		
caprifolium, db	.35	3.50		
chrysanthia, db	2.50			
korolkowi zabeli, db	2.50			
morrowi, db	1.00			
ruprechtiana, db	1.00			
tatarica, clean	.60	5.50		
— alba, db	.75			
— wheeleri, (red), db	1.50			
xylosteum, db	.30	3.00		
LYCIUM (LISH-ee-um)				
horridum	2.00			
ternifolia	.45	4.50		
MACADAMIA (mak-ah-DAM-ee-ah)				
MACLURA (mak-LOOR-ah)				
pomifera	.25	2.50		
MAGNOLIA (mag-NOHL-ee-ah)				
acuminata, clean	.45	4.25		
conspicua (Yulan), db	.40	3.75		
glauca (virginiana), clean	.45	4.50		
grandiflora, clean	.40	3.75		
— a northern strain, 100 seeds	1.50			
kobus, clean	.55	5.00		
liliflora, db	.45	4.50		
macrophylla, db	.40	4.00		
obovata (hypoleuca), clean	.50	5.50		
sieboldi (parviflora) db choice sp.				
with lge fragrant white fls.	.55	5.50		
soulangeana, db	.45	4.50		
— lennei, db	.45	4.50		
MAHONIA (mah-HOH-mee-ah)				
aquifolia, clean	.70	6.50		
nervosa, db	.65	6.50		
MALUS (MAY-lus) Apple				
baicala, clean seed	2.00	17.00		
—, dried pomes	.30	3.00		
— mandshurica, dried pomes	.80	3.00		
coronaria, clean seed	.80	7.50		
common, Stock Fr'ch Crab	.25	2.50		
— for stock—domestic seed	.30	2.75		
floribunda, clean seed	.75	7.50		
ioensis, clean seed	1.50			
*sargentii, dried pomes, NE	1.25			
Free blooming, dwarf or. Crab, true				
from seed				
sieboldi, clean seed	1.25			
theifera (hupehensis) dried pomes	.35	3.50		
Handsome small tree, free blooming.				
True from seed.				
zumi	1.25			
— calocarpa, dried pomes	.35	3.50		
MELALEUCA (mel-al-LEW-kuh) Bottle B.				
leucadendron	1.25			
MELIA (MEE-lee-ah)				
azedarach	.30	3.00		
MENISPERMUM (men-iss-SPERM-um)				
canadense	.30	3.00		
MERATIA (mer-RAY-shee-ah)				
praecox	.35	3.00		
MESPIRUS (MESS-pil-us)				
germanica, clean seed	.30	2.50		
MIMOSA (mim-MOH-suh)				
pudica	2.50			
MORUS (MOH-rus) Mulberry				
alba, clean seed	.35	3.50		
— tatarica, clean seed	.35	5.00		
nigra, clean seed	.50	4.50		
MYRICA (MYE-rik-ah)				
carolinensis	.30	3.00		
MYRTUS (MERT-us) Myrtle				
communis, clean seed	.65	6.00		
— compacta	2.00			
NANDINA (nan-DIN-nah)				
domestica, home grown, berries	.35	3.50		
— imported seed, clean	.40	4.00		
— white berry imported, clean	.55	5.50		
NEMOPANTHUS (nee-moh-PANTH-us)				
mucronatus, dried berries	.35	3.50		
NERIUM (NEER-ee-um)				
oleander	.35	3.50		
NYSSA (NISS-ah) Tupelo				
sylvestica, clean seed	.35	3.50		
OLEA (OH-lee-ah) Olive				
europaea, from wild plants	.30	3.00		
— cultivated varieties	.25	2.00		
OXYDENDRON (ox-id-DEN-drum)				
arborescens, clean seed	2.25			
FAEONIA (pee-OH-nee-ah)				
suffruticosa (arborea or moutan)	25 sds	\$2.00		
From choice collection named varieties.				
PALIURUS (pal-ee-YEW-rus)				
aculeatus (spina-christi), clean	.25	2.50		
PARKINSONIA (park-in-SO-nee-ah)				
aculeata	.55	5.00		
PAULOWNIA (pol LOH-nee-ah)				
lomentosa	.30	2.50		
PHASEOLUS (fas-SEE-ol-us)				
caracalla	100 seeds	\$1.75		
PHELLODENDRON (fel-lon-DEN-dron)				
amurense	.55	5.00		
PHILADELPHUS (fil-ad-DEL-phus)				
coronarius, clean seed	.45	4.50		
— garden varieties	1.50			
grandiflorus	.50	5.00		
PHOENIX (FEE-nix)				
canariensis	.25	1.50		
dactylifera	.30	3.00		
reclinata	.30	3.00		
roebeleni	250 seeds	\$2.25		
sylvestris	.30	2.75		
PHOTINIA (foh-TIN-ee-ah)				
glabra	.40	4.00		
villosa, clean seed	.50	5.00		
PICEA (PYE-see-ah) Spruce				
canadensis, domestic	1.80	18.00		
engelmanni	.75	7.50		
excelsa (abies) N Eur. vigorous	.60	5.00		
jezoensis hondoensis	.75	7.50		
mariana	2.50	19.00		
*omorika	4.50			
orientalis	.60	6.00		
polita	.75	7.50		
pungens glauca	1.75			
sitchensis	1.35	13.50		
PIERIS (py-ER-is)				
floribunda, N.E.	2.00			
floribunda	2.00			
japonica	2.25			
taiwanensis	3.50			
PINUS (pi-NUS) Pine				
banksiana	.65	6.50		
caribaea	.65	5.00		
cembra	.25	2.00		
contorta	.90	8.75		
— latifolia (murrayana)	1.00	10.00		
coulteri	.65	6.00		
densiflora	.35	3.50		
echinata	1.25	12.00		

Packets 25¢ each	per	Oz.	Lb.
<i>edulis</i> (cembroides <i>edulis</i>)35	3.50
<i>excelsa</i> (griffithi)25	2.50
<i>flexilis</i>25	2.50
<i>halepensis</i>25	2.50
<i>jeffreyi</i>50	5.00
<i>koraensis</i>35	3.50
<i>lambertiana</i>35	3.50
<i>maritima</i> (pinaster)25	2.00
<i>massoniana</i>70	
<i>monophylla</i> (C. monophylla)35	3.50
<i>montana</i> (mugo) lowland seed40	4.00
— gallica80	8.00
— mughus dwarf type; Eu. Alps55	5.50
— uncinata (rostrata) Eu. Alps55	5.50
<i>montezumae</i>75	7.50
<i>monticola</i>75	7.50
<i>muricata</i>75	7.50
<i>nigra</i> , Hill Strain, Austrian45	4.50
— poiretiana Calabria40	4.00
<i>palustris</i>40	3.75
<i>parviflora</i> (pentaphylla)45	4.50
<i>pinea</i>25	1.75
<i>ponderosa</i> (Timber Strain)50	5.00
<i>radiata</i> (insignis)65	6.50
<i>resinosa</i>	3.25	30.00
<i>rigida</i> , N. E.35	3.50
<i>sabiniana</i>25	2.50
<i>strobos</i> , Lake States Strain45	4.50
<i>sylvestris</i>80	8.00

Several strains offered with special Christmas Tree types, fast growing ornamental strains; ask for prices.

<i>faeda</i>	.....	.70	6.50
<i>thunbergi</i>	.....	.40	4.00
<i>torreyana</i>	.....	1.40	11.00

PITTSPOURUM (pit-TOSP-or-um)	
<i>crassifolium</i>	..... .75 7.50
<i>eugenoides</i>	..... .85 8.50
<i>tobira</i> , clean seed	..... .35 3.50
<i>undulatum</i> , clean seed	..... .45 4.50

PLATANUS (PLAT-an-us) Plane Tree	
<i>occidentalis</i>	..... .25 1.35
— clean seed	..... .25 2.25
<i>orientalis</i> , clean seed	..... .25 2.00

PLUMBAGO (plum-BAY-go)	
<i>capensis</i>	..... 1,000 seeds \$4.00

POINCIANA (poyn-see AY-nuh)	
<i>gillesi</i>	..... .45 4.50
<i>regia</i> (Delonix)	..... .90

PRUNUS (proon-US) Plum	
<i>americana</i> , clean seed	..... .25 2.50
<i>amygdalus</i> Sweet Almond	..... .25 1.25
— Bitter Almond	..... .25 1.75
<i>armeniaca</i> clean seed (Apricot)	..... .20 .90
— <i>ansu</i> , clean hardy	..... .25 2.00

Japanese Apricot, close to mandshurica with better fruit.

<i>avium</i> , Mazzard, clean seed	..... .25 2.00
<i>cerasifera</i> , (Myrobalan), clean	..... .25 2.00
<i>demissa melanocarpa</i> , clean	..... .30 2.75
<i>glandulosa</i> , d. b.	..... 1.50
<i>ilicifolia</i> , clean seed	..... .30 3.00
<i>incisa</i> , d. b. domestic, N. E. seed	..... 1.50

— clean seed, imported	..... .55 6.00
<i>lannesiana</i> , clean seed	..... .35 3.25
<i>lyoni</i> , (integrifolia), clean seed	..... .30 3.00
<i>lusitanica</i> , clean	..... .35 3.50
<i>mahaleb</i> , clean seed	..... .30 3.00

<i>maritima</i> , N. E., d. b.	..... .25 3.50
— with thin skinned fruits	..... .75
<i>mume</i> , clean seed	..... .25 2.50
<i>officinalis</i>	..... .20 2.00

<i>podus</i> N. E., d. b.	..... .90
<i>pennsylvanica</i>	..... .40 3.25
<i>persica</i> (Peach), Lovell variety	..... .20 1.00
<i>salicina</i>	..... .25 2.25

* <i>sargentii</i> (serrulata sac.) clean	..... .40 4.00
<i>serotina</i> , clean, N. E.	..... .30 3.00
<i>serrulata</i> , clean seed	..... .35 4.00
<i>spinosa</i> , clean seed	..... .25 2.00

* <i>subhirtella</i> , clean seed	..... .35 3.50
— <i>pendula</i> , clean seed45 4.50
<i>tomentosa</i> , clean seed35 3.50
<i>virginiana</i> , d. b.25 2.25

* <i>yedoensis</i>35 3.50
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PSEUDOLARIX (soo-doh-LAR-ix)	
<i>kaempferi</i> (amabilis)40 4.00

PSEUDOTSUGA (soo-doh-TSOO-gah)	
<i>douglasii</i> Fraser River type	..... 1.15 11.00
— <i>glauca</i> , Colorado strain	..... 1.35
— <i>viridis</i> , Coast form, Oregon	..... 1.25 11.00

PTELEA (TEEL-ee-ah)	
<i>trifoliata</i>	..... .25 2.25

PUERARIA (pew-er-RAY-ree-ah)	
<i>thunbergiana</i>	..... .35 3.00

FUNICA (PEW-nik-ah)	
<i>granatum</i>	..... .35 3.50

PYRACANTHA (pye-ruh KANTH-ah)	
<i>coccinea</i> Ialandi, clean seed	..... .25 4.00

PYRUS (PYE-rus) Pear	
<i>common pear</i> , domestic seed	..... .40 4.00
<i>serotina</i>	..... .60 6.50

RAPHIOLEPIS (raf-ee-OL-ep-iss)	
<i>ovata</i> (japonica)	..... .45 4.50

RHAMNUS (RAM-nus)	
<i>cathartica</i> , clean seed	..... .35 3.50

<i>crenata</i> , N. E. better than next	..... .90
<i>frangula</i> , clean seed	..... .45 4.50
<i>purshiana</i> , clean seed	..... .45 - 4.50
RHODODENDRON (roh-doh-DEN-dron)	
<i>arborescens</i>	..... 1.50
<i>auriculatum</i>	..... Pkt. 75¢
<i>cantabile</i>	..... Pkt. 75¢
<i>carolinianum</i> from wild plants	..... 3.00\$
<i>cataphractum</i>	..... Pkt. 50¢
— <i>compactum</i> , N. E.	..... Pkt. 50¢
<i>discolor</i>	..... Pkt. 75¢
<i>fortunei</i> x <i>hardy</i> Hybrids	..... Pkt. 75¢
<i>grande</i>	..... Pkt. 75¢
<i>griffithianum</i> v. <i>aucklandi</i>	..... Pkt. 75¢
<i>hippophaeoides</i>	..... Pkt. 75¢
<i>maximum</i> , from wild plants	..... Pkt. 75¢
<i>ponticum</i> , So. Europe	..... Pkt. 75¢
— No. Europe, garden strain	..... Pkt. 75¢



RHODOTYPOS (roh-doh-TYE-pus)	
<i>kerrioides</i>	..... .45 4.50

RHUS (RUSS) Sumac	
<i>canadensis</i> (aromatica) clean	..... .25 2.50
<i>copallina</i>	..... .25 2.50
<i>copallina</i> , clean seed	..... .30 2.75
<i>glabra</i>	..... .25 2.25
<i>lobata</i> , clean seed	..... .35 3.50
<i>typhina</i>	..... .25 2.25

RIBES (RY-beez) Currant	
<i>aureum</i> , d. b., N. E.	..... 1.00

ROBINIA (roh-BIN-ee-ah)	
<i>hispida</i> fertilis	..... 1.60
<i>pseudoacacia</i>	..... .25 1.75
— <i>inermis</i>	..... .35 3.50

ROSA Rose	
<i>blanda</i> , d. b.	..... .25 2.25
<i>canina</i> , clean seed	..... .25 1.75
<i>humilis</i> , d. b.	..... .35 3.25
<i>lucida</i> (virginiana) clean seed	..... .55 5.50
<i>maximowicziana</i>	..... 1.25
<i>multiflora</i> , thornless, clean	..... .45 4.50
<i>palustris</i> , d. b.	..... .30 3.00
* <i>primula</i>	..... 2.00

<i>rugosa</i> , clean seed	..... .35 3.25
— <i>Deep Red</i> Sel. N. E. clean	..... .70
— <i>White</i> , N. E., clean seed	..... .55 5.50
<i>setigera</i> , clean seed	..... .55 5.50
<i>spinossissima</i> , clean seed	..... .40 4.50
<i>wichuraiana</i> , clean seed	..... .40 4.00

RUSCUS (RUS-cus)	
<i>aculeatus</i> , clean seed	..... .30 3.00

SABAL (SAY-bal) Palmetto	
<i>blackburnia</i>	..... 500 seeds \$3.50
<i>minor</i> (adamsoni)	..... 500 seeds \$3.50

SAMBUCUS (sam-BEW-kus) Elder	
<i>canadensis</i> , clean seed	..... .35 3.75
<i>coerulea</i> (glauca) N. Rockies	..... .40 3.75
<i>nigra</i> , clean seed	..... .25 3.50
<i>racemosa</i> , clean seed	..... .40 3.75

SAPINDUS (sah-PIN-dus Soap-berry)	
<i>drummondii</i>	..... .35 3.50

SASSAFRAS (SAS-ah-frass)	
<i>varifolium</i>	..... .25 2.50

CHINUS (SKYE-nus)	
<i>mollis</i>	..... .25 2.50
<i>terebinthifolius</i>	..... .35 3.50

SCIADOPITYS (sy-ah-DOP-e-tis)	
<i>verticillata</i>	..... .80 3.50

SEAFORTHIA (see-FORH-ee-ah)	
<i>elegans</i>	..... 250 seeds \$2.00

SEQUIA (see-KWOY-ah)	
<i>gigantha</i>	..... 1.75 15.00
<i>sempervirens</i> , Calif. seed only	..... .80 8.00

SHEPHERDIA (shep-HERD-ee-ah)	
<i>argentea</i> , d. b.	..... .40 4.00
<i>canadensis</i> , d. b.	..... .60 3.50

SKIMMIA (SKIM-mee-ah)	
<i>japonica</i> d. b.	..... .35 3.50

SOPHORA (soh-FOH-rah)	
<i>japonica</i>	..... .25 2.50
— seed from <i>pendula</i> form	..... .25 2.50
<i>vicifolia</i>	..... 4.50

SORBUS (SOR-bus)	
<i>americana</i> , d. b.	..... .40 4.00
<i>aria</i> , clean seed	..... .45 4.00
<i>aucuparis</i> , domestic, d. b.	..... .25 2.50
<i>commixta</i> , d. b.	..... .70
<i>domestica</i> , clean seed	..... 1.25
<i>terminalis</i> , clean seed	..... .60

SPARTIUM (SPAR-tee-um)	
<i>juncum</i>	..... .25 2.00

STAPHYLEA (stap-il-LEE-ah)	
<i>trifolia</i>	..... .35 3.50

STEWARTIA (stew-ART-ee-ah)	
<i>koreana</i> , N. E.	..... Pkt. 75¢
<i>monadelphica</i> , N. E.	..... Pkt. 75¢
<i>pseudocamellia</i>	..... .75 6.00

STYRAX (STYE-rax)	
<i>americana</i>	..... .25 2.25
<i>japonica</i>	..... .50 3.00
<i>obassia</i>	..... .60 4.25

SWONTZIA	
<i>madagascariensis</i>	..... Pkt. 75¢

SYMPHORICARPOS (sim-for-ik-KARP-os)	
<i>racemosus</i> , clean seed	..... .35 3.50
<i>vulgaris</i> , d. b.	..... .35 3.50

SYMPLOCOS (sim-PLOH-kos)	
<i>paniculata</i> , d. b. N. E.	..... .75

SYRINGA (si-RIN-gah) Lilac	
<i>henryi</i> (villosa x <i>josikaea</i>) clean	..... 1.50
<i>josikaea</i> , clean seed	..... .85 7.50
— <i>rosea</i> , clean seed	..... 1.25
<i>villosa</i>	..... 1.25 8.50
<i>vulgaris</i> , clean seed	..... .50 5.00
— <i>nana</i>	..... .90

TAMARIX (TAM-ah-rix)	
<i>gallica</i>	..... .25 2.50

TAXODIUM (tax-OH-dee-um)	
<i>distichum</i>	..... .25 2.25

TAXUS (TAX-us)	
<i>baccata</i>	..... .25 2.50
— <i>erecta</i> , d. b., N. E.	..... 1.50
<i>cuspidata</i> , home grown, d. b.	..... .65 1.75
<i>media hicksii</i> , N. E., clean seed	..... 1.50 13.00

TETRAPANAX (tet-RAP-ah-nax)	
<i>papyrifera</i> (Aralia)	..... 2.75

THEA (THEE-ah)	
<i>sinensis</i>	..... .25 2.50

THUJA (THOO-yah) Arbor Vitae	
<i>occidentalis</i>	..... .85 8.50
— <i>aurea</i>	..... .85 7.50
— <i>pyramidalis</i>	..... 1.50
— <i>wareana</i>	..... .70 7.00
<i>orientalis</i>	..... .25 2.50
— <i>aurea</i>	..... .35 3.50
— <i>compacta</i>	..... .35 3.50
— <i>pyramidalis</i> (tatarica)	..... .35 3.50
<i>prunifolia</i> , clean seed	..... .50 4.75
<i>sieboldii</i> , clean seed	..... .50 5.00
<i>tinus</i> , d. b.	..... .25 2.00
<i>wrightii</i> , clean seed	..... .90 9.00

<i>glaucia</i>	..... .90
<i>gloriosa</i>	..... .90
<i>cilicica</i>	..... .50 4.00
<i>concolor</i> , Calif., lowiana var.	..... .50 4.30
<i>cyanophylla</i>	..... .45 4.00
<i>cyclops</i>	..... .30 3.00
<i>palmatum</i> , garden specimens	..... .60 5.50

ACTINIDIA (ak-tin-NID-ee)	
<i>arguta</i>	..... 1.50
<i>glandulosa</i>	..... .25 1.40
<i>fruticosa</i>	..... .35 1.50

VITEX (VYE-tex)	
<i>agnus castus</i>	..... .25 2.50
<i>negundo</i>	..... .25 3.25

WASHINGTONIA (washing-TOH-nee-ah)	
<i>tilifera</i>	..... .30 2.50
<i>robusta</i>	..... .40 3.50

WISTERIA	
<i>frutescens</i>	..... .35 3.25
<i>multi-juga</i> , blue or white	..... .50 5.00
<i>sinensis</i> , blue or white	..... .40 3.50

ZIZIPHUS (ziz-ee-PHUS)	
<i>jujuba</i> , clean seed	..... .35 3.00

YUCCA (YUK-ah)	
<i>filamentosa</i>	..... .75 5.00

Forms between *carlesi* & *bitchuense*.

<i>cassinoides</i> , d.)b.	..... .35 3.50
<i>deniata</i> , d. b.	..... .25 2.50
* <i>dilatata</i> , clean seed	..... .40 4.25
<i>lantana</i> , clean, home grown	..... .40 4.00
<i>lentago</i> , clean seed	..... .45 4.75
<i>odoratissimum</i> , clean seed	..... .45 4.75
<i>opulus</i> , clean seed	..... .35 3.50
<i>plicata</i>	..... .70 7.00
<i>tandishi</i>	..... .65 6.50

THUJOPSIS (theu-JOP-sis)	
<i>dolabrata</i> , Oriental seed only	..... .80 8.00

TILIA (AIL-ee-ah) Basswood	
<i>americana</i>	..... .25 2.25
<i>cordata</i>	..... .30 2.75
<i>europaea</i> (cor. x <i>platyphyllos</i>)	..... .25 2.50
<i>platyphyllos</i>	..... .25 2.25
<i>tomentosa</i>	..... .25 2.25

YUCCA (YU-K-ah)		
filamentosa .....	.75	5.00
Forms between carlesi & bitchuiense.		
cassinoides, d.)b. ....	.35	3.50

Saier's GARDEN MAGAZINE

DIMONDALE, MICHIGAN.

VOL. 2. No. 16.

OCTOBER 1951.

Owner and publisher of Saier's Garden Magazine, Harry E. Saier, Dimondale, Mich. Issued each month. Subscription price \$2.00 per year; 2 years \$3.00; single copies 25 cents.

Send all seed orders to the Pioneer Seed Company, Dimondale, Michigan.

SUBSCRIPTIONS AS XMAS GIFTS

A letter just received from Mrs. Betty Hale Ferguson of Dallas, Texas, bring up the subject of subscriptions to SAIER'S GARDEN MAGAZINES as suitable Christmas presents. We have had this in mind and this will be found in another column.

She kindly writes as follows: "I found the listings of the Pioneer Seed Company about five years ago and from the seed paper I have ordered seeds at different times since. I have always found them to be very satisfactory:

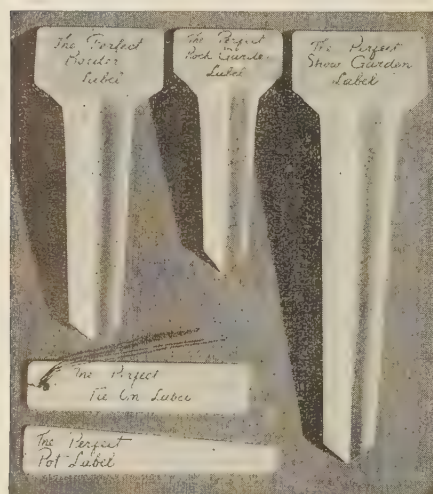
I subscribed to your Garden Magazine and it started with the first issue. I am highly pleased with it and would like to give subscriptions as Christmas gifts. Will you please advise me when I should send the subscription information? Also, could it be arranged that each recipient of a subscription would receive the Seed Book to be released in January, without further ordering by me or the person?"

It is our intention to save out four or
Continued on Page 151

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MARK with ORDINARY LEAD PENCIL

Mark with your ordinary lead pencil; it is permanent and will not fade or become unreadable. If you wish to make any changes an ordinary eraser will remove the writing.



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12 labels: \$1.50; 25, \$2.90; 100, \$11.25.

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DIMONDALE, MICHIGAN

TROLLIUS - URSINIA - VERBENA

TROLLIUS. (TROL-ee-us) GLOBE FLOWER. Ranunculaceae.

They make nice spring flowering plants in the border if planted in a low moist place with some shade. Colors are yellow or orange and in form Buttercup-like; easy.

- albiflorus. Creamy white fls; 15"; HP..... TROL-2. 25¢
- europaeus. Globe Fl. (St. Wolfgang); lemon-yellow; 2" ac; HP..... TROL-8W. 25¢
- Orange Princess. Pretty orange variety; 1 ft; HP..... TROL-8P. 25¢
- Ledebourii. Yellow fls; 2 ft; sunny place in bog garden; HP..... TROL-19. 25¢
- pallidus. Soft yellow fls; 2 ft; for the brook side; HP..... TROL-19T. 25¢
- pumilus. Alpine King-cup. Golden yellow cups; 10"; pretty; HP..... TROL-20. 25¢
- Trollius Blend. All above species mixed..... TROL-X. 20¢

TULIPA. (TEW-li-uh) TULIP. Liliaceae.

Growing Tulips from seed is interesting, especially so with the species. Usually these come true from seed; they are easily grown but the seeds do not germinate quickly. The species, or Botanical Tulips, are very pretty and should be grown more.

- biflora. RG sp, star-like fls white or yellow; 5"; HBB..... TULP-4. 20¢
- Clusiana v chrysaniha. Golden yellow vase-shaped; 6"; HBB..... TULP-9C. 20¢
- stellata. White or yellow; pretty; 8"; HBB..... TULP-9S. 25¢
- Kaufmanniana. Beautiful; water lily-like; white, yellow, pink 8"..... TULP-25. 25¢
- Sprangeri. Bright red; funnel-shaped in bud; last to flower; 12"..... TULP-47. 25¢
- sylvestris. Bright yellow, frag; 9-18"; HBB..... TULP-51(C). 30¢
- Tulip Blend. All above mixed..... TULP-X. 20¢

TUNICA. (TOO-nik-uh) TUNIC FLOWER. Caryophyllaceae.

Herbaceous annuals and perennials similar to Dianthus in growth but smaller. For edging or the rockery.

- saxifraga. Tufted, spreading; pink fls; HP..... TUNI-2. 20¢

UNIOLA. (eu-NA-oh-lah) Gramineae.

North American perennial grasses with prominent 2-edged spikelets borne in panicles.

- latifolia. Pretty n thie border; 5 ft; HP..... UNIO-1. 15¢

URSINIA. (ur-SIN-ee-uh) Compositae.

South American annuals and perennials, the flowers daisy-like, solitary or loosely clustered. Sow seeds early indoors or direct to soil. Treat as an annual.

- anethoides. Jewels-of-the-Veldt. Orange fls purple centers; 18" HA..... URSN-1. 20¢
- aurora. Brilliant orange; crimson zone; HA..... URSN-1A. 20¢
- cakilifolia. Yellow or orange; S. Rhodesia..... URSN-5. 25¢
- pulchra compacta. Yellow or orange, 2" ac; rays br-purple; 2 ft; HA..... URSN-7. 20¢
- Ursinia Blend. Above mixed and many pretty hybrids..... URSN-X. 15¢

VACCINIUM. (vak-SIN-ee-um) BLUEBERRY, CRANBERRY. Ericaceae.

Hardy shrubs and trees grown for ornament or for their edible fruits and all thriving in rather acid soils of a peaty sand nature. Sow the seeds in the fall or stratify till spring. If interested in quantity of seed write for prices.

- augustifolium. (pennsylvanicum) Dec; bluish black fr; 1 ft; HSh..... VAC-1. 25¢
- canadense. Deciduous; fr; blue; 1-2 ft; HSh..... VAC-6. 25¢
- corymbosum. Highbush or Swamp B; Wortleberry; 15 ft; HSh..... VAC-7. 25¢
- Seed from large fruited named varieties..... VAC-7N. 25¢
- Mixed Vacciniums. All above mixed..... VAC-X. 20¢

VALERIANA. (val-er-ee-AY-nuh) VALERIAN. Valerianaceae.

Perennial plants and shrubs with small white or rose flowers in cymes or spikes. Very easy to grow in the border; they are very fragrant.

- officinalis. Garden Heliotrope. Popular; pink, red, white fls; 4 ft; HP VAL-12X. 15¢
- White..... VAL-12W. 15¢
- Red..... VAL-12R. 15¢
- rubra: see *Centranthus rubra*.

VERBASCUM. (ver-BASK-um) MULLEIN. Scrophulariaceae.

Mostly tall hardy biennials; making good specimens in the back ground of the border; thrive in most any soil and are easy to grow.

- paniculatum alba..... VEBS-18. 25¢
- phoeniceum hybrids. Purple and red fls in racemes; 4 ft; HB..... VEBS-19. 20¢

VERBENA. (ver-BEE-nuh) Verbenaceae.

Germ. 10 days.

Mostly perennials and highly prized for their profuse blooming. In the North they are grown as hardy annuals but in the far South they can be sown as perennials. In the North start seeds indoors for real early flowers; set 1 ft. apart in a sunny place.

V. TEUCRIODES: To which probably belong most of the popular garden varieties. The varieties following are the very best and all mammoth in size.

- Daneborg. Scarlet with showy white eye..... VERB-1D. 15¢
- Etna. Large trusses of intense geranium-red fls..... VERB-1E. 15¢
- Lavender Glory. Pretty shades of lavender with cream eye..... VERB-1L. 15¢
- Luminosa. Pink shaded to salmon..... VERB-1M. 15¢
- Gigantea Mixed. Above and many other colors..... VERB-1GX. 15¢
- compacta, Mixed. Low growing, 6"; for edging or bedding..... VERB-1CX. 20¢

VERBENA SPECIES:

- bipinnatifida. Lilac-purple fls in loose clusters; showy; HP..... VERB-2. 20¢
- canadensis. (aubletia) Violet-red; June to frost; 10"; *HP..... VERB-5. 20¢

VERBESINA. (ver-bes-SYE-nuh) Compositae.

Am. plants and shrubs, yellow, orange or white flowers, solitary or in paniced heads.

- enceliodes. Golden yellow rays, 2" ac; TA..... VEBE-3. 20¢

VERONICA. (ver-RON-ik-uh) SPEEDWELL. Scrophulariaceae.

Annual and perennial plants popular in the rockery or border, hardy, free flowering and thriving in a sunny or light shady place; they are easy from seed.

- spicata mixed. Blues, reds, pink, white fls; 18"; HP..... VERO-70X. 15¢
- nana alba. Low growing strain; white flowers..... VERO-70NA. 20¢
- Blue Shades..... VERO-70B. 15¢
- Blue Sky. Pretty sky blue variety..... VERO-70S. 15¢

NOTE: It is our intention that these seed lists be correct, both as to classification and to descriptions. We use Hortus II as our authority. If any of our readers note a mistake, we will certainly deem it a favor if it is pointed out to us.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

VERNONIA - VIBURNUM - VINCA

VERNONIA. (ver-NOH-nee-uh) IRONWEED. Compositae.

Herbaceous perennials in the North and tropical trees and shrubs in the South. The flowers are showy and in purple, pink or white heads of disk flowers, in terminal clusters. Bloom late in the summer and autumn; easily grown for border or wild garden.

- glabra. Deep blue; 1-2 ft; good for cutting; S. Rhodesia; TP..... VERN-6. 25¢
- karongensis. Bright purple; 1-2 ft; dandy; S. Af; TP..... VERN-9. 25¢
- melleri. Sky blue, a large plant; S. Rhodesia; TP..... VERN-12. 25¢
- Vernonia Blend. All above mixed..... VERN-X. 20¢

VIBURNUM. (vy-BURN-um) SNOWBALL. Caprifoliaceae.

These are one of the most popular ornamental shrubs. They should also be grown more as bird refuges for their fruits make excellent winter feed for all kinds of wild life. The seed should be stratified in the fall and planted in the spring when they germinate readily.

- acerifolium. Dockmackie. White, cymes; May-June; 6 ft; HSh..... VIB-1. 25¢
- alnifolium. Hobbie Bush, Am. Wayfaring T. White, May-June; 10'; HSh..... VIB-2. 25¢
- americanum: see V. trilobum.
- Carlesii. White, fragrant; dense cymes; April-May; 5 ft; HSh..... VIB-12. 25¢
- cassinoides. Whithe Rod. White, cymes; June-July; 12 ft; HSh..... VIB-13. 25¢
- dentatum. Arrow Wood. White, cymes; May-June; 15 ft; HSh..... VIB-20. 25¢
- dilatatum. White, cymes; May-June; fr scarlet; 10 ft; HSh..... VIB-21. 25¢
- Lantana. Wayfaring T. White, cymes, 4" ac; May-June; 15 ft; HSh..... VIB-36. 25¢
- Lentago. Sheep Berry. White, cymes; May-June; hardy; to 30 ft; HSh..... VIB-37. 25¢
- odoratissimum. White, fragrant; panicles; May-June; 10 ft; HSh..... VIB-46. 25¢
- opulus. Eu. Cranberry Bush. White; May-June; 12 ft; HSh..... VIB-47. 25¢
- prunifolium. Black Haw. White, cymes, 4" ac; April-May; 15 ft; HSh..... VIB-52. 25¢
- Sieboldii. Creamy white, panicles; May-June; 10 ft; Japan; HSh..... VIB-65. 25¢
- Tinus. Laurestinus. White or pinkish, grown in GH; 10 ft; HHSh..... VIB-68. 25¢
- trilobus. Cranberry Bush. White, cymes; May-June; 12 ft; HSh..... VIB-69. 25¢
- Wrightii. White, cymes; May-June; 10 ft; Japan; HSh..... VIB-77. 25¢
- Viburnum Mixture. All above species mixed..... VIB-X. 25¢

VIDORELLA. (vid-o-RELL-ah)

Seeds from S. Rhodesia; better classification later.

- residifolia. Small bright yellow globular fl heads; for S..... VIDO-1. 25¢

VINCA. (VIN-kah) PERIWINKLE. Aprocynaceae.

Erect and trailing plants. They are useful for ground cover and in vases and baskets. Thrive in moist shady places.

- rosea. Mixed. Sow seeds early in warm place; the GH Vinca..... VINC-4X. 15¢
- Pure White..... VINC-4W. 15¢
- Crimson..... VINC-4C. 15¢
- White with Pink Eye..... VINC-4B. 15¢
- Soft Pink..... VINC-4P. 15¢
- Rose..... VINC-4R. 15¢

VIOLA. (vy-OL-uh) VIOLET. Violaceae.

The genus consists of many attractive herbaceous perennials and a few annuals. The Violet and Pansy are the two most popular. They all thrive in a rich soil and in partial shade. During winter they are require a mulch of leaves. The germination of Violets is different from that of Pansies; if handled the same way, good results will seldom be gotten. Try planting the Violets in the fall, in flats, leaving them outside to get the freezing weather, when they germinate good the first thing in the spring.

VIOLA CORNUTA: Horned Violets. More or less tufted Violets. They come in many varieties of which the best and most popular are listed here. They do best in partial shade, rich moist soil and where it does not dry out too much in the summer.

- Arkwhight Ruby. Rich crimson with dark eye..... VIOL-1A. 20¢
- Bicolor. Light violet-blue; very pretty..... VIOL-1B. 20¢
- Blaua Schonheit. Clear deep blue; new German variety; fine..... VIOL-1BS. 20¢
- Blue Gem. Jersey Gem. Compact violet-blue..... VIOL-1BG. 20¢
- Chantreyland. Pure apricot; free flowering..... VIOL-1C. 20¢
- White Gem. Pure white; dandy..... VIOL-1W. 20¢
- Ilona. A very pretty wine-red..... VIOL-1L. 20¢
- King Henry I. Deep violet with heavenly blue center, bright eye..... VIOL-1H. 20¢
- Lord Nelson. Large violet-purple..... VIOL-1N. 20¢
- Lutea splendens. Large golden yellow..... VIOL-1S. 20¢
- Papilio. Light blue with white spots..... VIOL-1P. 20¢
- Thuringia. Dark blue with white eye..... VIOL-1T. 20¢
- Gem Varieties Mixed. Compact growing strain..... VIOL-1XG. 20¢
- Viola Blend. Blend of all the above varieties..... Oz. \$5.00..... VIOL-1X. 20¢
- W-F Blend. Bright gay colors in selfs, colors of reds, yellow, blue and apricot combined with many shades which are blotched; Oz. \$6.00..... VIOL-1WF. 25¢

VIOLA SPECIES: All hardy perennials.

- adunca. Very hardy woodland Violet; violet; 4"; Alaska..... VIOL-2. 25¢
- bellidifolia. Dwarf matted; violet or purple fls; 3"; Rockies..... VIOL-15. 25¢
- Douglasii. Orange-yellow veined purple; gritty soil; 4"; Calif..... VIOL-34. 25¢
- glabella. Big bright yellow fls; 12"; Alaska..... VIOL-48. 25¢
- Hallii. Upper petals dark violet, lower white; 4"; Ore..... VIOL-53. 25¢
- nigra, Black Imp. Quaint little Pansies; black velvet, small eye..... VIOL-79. 25¢
- saxatilis. Dawnside Strain of Johnny-Jump-Ups. This is an exceptional strain and we receive many fine comments on it every year; best as annual..... VIOL-114D. 25¢
- sempervirens. (sarmentosa) Yellow fls; decumbent; B. C..... VIOL-116. 25¢
- Viola species Blend. Blend of above species only..... VIOL-XS. 25¢
- Viola Blend. All kinds mixed..... 1/4 Oz. \$2.00..... VIOL-X. 20¢

VIRGINIA STOCKS: see Malcomia.

VISCARIA: see Lychnis.

WALLFLOWER: see Cheiranthus cheiri.

WOODFORDIA. (wood-FOR-de-ah).

- fruticosa. Small red fls; Indian tr of Cape Myrtle Fam. for far S.... WOOF-1(M). 35¢

XANTHISMA. (zanth-IS-mah) Compotitae.

Annuals and perennials native of Texas; solitary heads of yellow flowers for the border. They make good cut flowers.

- texanum. Star of Texas. Heads 2" ac; summer; 4 ft; TA..... ZANT-1. 20¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

IRIS RETURNED!!

We have had two boxes of Iris returned by the post office this week for lack of address! The address was on gummed labels and also shipping tag showing the nursery inspection. Both boxes were in a bad condition, crushed and broken; so much so that the string or twine that tied the box, was even gone.

Unfortunately we have no way of telling to whom these boxes belong and will have to await complaints.

SUBSCRIPTIONS AS XMAS GIFTS

Continued from Page 150

five sections of the October and November issues and add them to the December issue, making the special magazine to around 100 pages. This will be mailed so as to be delivered before Christmas and the actual subscription to start with the January issue.

This will also include all seed lists by the Pioneer Seed Company.

The subscription price at present is only \$2.00 per year but this will have to increased soon, because of the continual increase in expenses in the publishing trade: Also, because of a limited staff, the earlier these subscriptions can be received, the easier it will be for us to take care of them; possibly we can prepare a special Xmas envelope for them.

Those wishing to send five single subscriptions - to five different addresses - we will allow a special Xmas price of \$7.50 for the five subscriptions.

SOME TROPICAL SEEDS

Calliandra surinamensis, an evergreen large shrub or small tree from Dutch Guiana, flowers with pretty white stamens, the tips brightly tinted pink. They resemble much the Mimosa tree (Albizia julibrissin) that is widely planted for ornament through Georgia and South Carolina. However, this Calliandra is evergreen and is only half hardy.

By E. A. Menninger

Decussatus: dee-kuss-SAY-tus; arranged in pairs, (decussate).

SPHAGNUM FOR GERMINATING



It is simply impossible to germinate many seeds without the use of milled sphagnum moss. If you were over your seed pans all day long as the professional grower is you may find you could get along without it, but no professional grower would fail to have the fine moss on hand. It will save many a packet of valuable seed from loss due to an hours neglect, that cannot be avoided by one having other duties.

BUSHEL BAGS: \$2.25, postpaid. This will last the average grower a year.

PIONEER SEED COMPANY
Dimondale, Michigan.

ADVENTURES WITH CRINUMS

By Cecil Houdyshel, Calif.

Continued from Page 145

name immortal by producing Amaryllis Johnsoni. Many others have gained fame; why not try producing new types of crosses between Crinums and BRUNSVIGIAS?

EDITOR' NOTE: We are pleased to re-print this article which was in the Bulb Society bulletin for September. It contains much of interest on Crinums which should be recorded. We also agree with Mr. Houdyshel, in more gardeners becoming interested in breeding or improving different flowers; there is a big opening in this, especially with the more rare types. It is our intention to have more reading matter on this subject during the winter. By the way those of our readers who would like to join the Bulb Society, should write them at 345 W. Colorado St., Arcadia, Calif.

MATRIMONY VINE?

We have a terrible pest in our backyard and I am asking your advice about getting rid of it. I am not sure just what it is but my mother called it Privet Vine. It isn't really a vine but grows tall and just leans on a support. It is woody, has a few thorns long slender leaves and a very small purple bloom. My husband and I have tried to dig it out but it keeps cropping up and spreading. Plants come up 20 feet from where the original plant grew.

Mrs. J. C. Gamble, Mont.

Your plant is the Matrimony Vine (Lycium). While it has underground suckers, it has never been invasive with us altho it does seem hard to kill out. If you had a plant or two, it could be dug out easily but one would want to watch carefully that a new growth did not come up and if it does to immediately dig it out. However, it should not be hard to kill if you did not let it leaf out.

If treated early in the spring, when the growth is soft, some of the chemical weed killers might kill it out. Probably some of our readers have had practical experience in this work and will give their method.

CALONYCTION TUBA (Ipomaea Tuba)

We have been growing this vine for four years and wondered why it did not blossom. We learned why this year! A host of very small caterpillars eat the buds when first forming; larger caterpillars bore and use the buds for their young. I sprayed and gathered large and small caterpillars every morning for 30 days this season and now the buds are ripening their seeds and another insect bores and lays its eggs within.

It appears we will not have seed this year. The bulbs do not multiply but we will try taking mature cutting after seeding.

I have grown flowers for 60 years and have never yet seen so beautiful a tubular blossom as this one.

Paul A. Girouard, Fla.

Dichotomus: (dye-KOT-om-us), forked or two-branched.

TREE and SHRUB SEEDS

Continued from Page 149

corymbosum d. b. ....	.95	
pennsylvanicum, d. b.	1.25	
VIBURNUM (vye-BURN-um)		
acerifolium, clean seed .....	.65	6.00
alnifolium, clean seed .....	.65	6.00
americanum (trilobum), clean .....	.90	9.00
carlesii hybrids	2.00	

PIONEER SEED COMPANY

Dimondale, Michigan, U. S. A.

XERANTHEMUM - ZINNIAS

XERANTHEMUM. (zeer-ANTH-em-um) IMMORTELLE. Compositae.

Easily grown annual everlasting flower with solitary heads of disk flowers. They are good as cut flowers and very popular for drying. Sow seeds early in the spring.

—annuum, Mixed. 3ft; double flowers.....	XERN-IDX. 15¢
—Purple. Double flowers.....	XERN-IDP. 15¢
—Rose. Double flowers.....	XERN-IDR. 15¢
—White. Double pure white.....	XERN-IDW. 15¢

PRICE: Oz. 55¢; ¼ Oz. \$2.00; 1 lb. \$5.00, prepaid.

YUCCA. (YUKK-uh) Adam's Needle, Spanish Bayonet, Joshua Tree. Liliaceae.

Suitable for bold effect in the border or for specimen plants on the lawn. Some are hardy, others need greenhouse care in the North. All easily grown from seeds.

—filamentosa. Reclassified recently to Y. Smalliana, which see.	
—glauca. Greenish white fls; fls to 6 ft; lvs to 3 ft; hardy in North.....	YUCC-14. 25¢
—gloriosa. Fls greenish white to reddish; lvs to 2½ ft; fls to 8 ft; HHP.....	YUCC-15. 25¢
—mohavensis. Mojave Y. 10 ft; fls purple-white; HHP.....	YUCC-20. 25¢
—Smalliana. Adam's Needle. White; fls to 12 ft; hardy in North.....	YUCC-25. 20¢
—Yucca Blend. Above species mixed.....	YUCC-X. 20¢

ZINNIA. (ZINN-ee-uh) (crassima) Compositae.

A genus of some 10 species of which Z. elegans is our popular garden Zinnia. These are tender annuals and they may be started early indoors where they can be transplanted to flats and set out as soon as frost danger is passed. A little pinching back will produce more bushy plants; set out 1½-2 feet apart for the large type. They are especially good in the border, in bedding and for stiking effect in mass plantings, and if solid colors used they will be much more effective.

DAHLIA-FLOWERED TYPE: The plants are 2½-3 feet tall with large Dahlia-like blooms; especially good for bedding.

—Canary Bird. Rich canary yellow.....	ZIN-1C. 15¢
—Crimson Monarch. Large deep crimson.....	ZIN-1C. 15¢
—Dream. Most unusual rosy lavender.....	ZIN-ID. 15¢
—Exquisite. Light rose with a deep rose center.....	ZIN-1E. 15¢
—Illumination. Deep rose self; fine.....	ZIN-1N. 15¢
—Golden Dawn. Rich golden yellow.....	ZIN-1GD. 15¢
—Golden State. Beautiful golden yellow.....	ZIN-1GS. 15¢
—Luminosa. Large luminous bright pink.....	ZIN-1L. 15¢
—Meteor. Rich red; darkest of the reds.....	ZIN-1M. 15¢
—Polar Bear. Large creamy white.....	ZIN-1W. 15¢
—Royal Purple. Best in rich purple.....	ZIN-1RP. 15¢
—Will Rogers. Lovely brilliant scarlet-red.....	ZIN-1WR. 15¢
—Dahlia-flowered Blend. A rich blend of the above varieties.....	ZIN-1X. 15¢

PRICES: Ounce, 70¢; ¼ lb. \$2.25; 1 lb. \$6.00, prepaid.

GIANTS OF CALIFORNIA TYPE: The plants are 3-4 feet tall with large flat flowers on long stems and especially recommended for cutflowers; they are fine in beds, too.

—Brightness. Bright pink.....	ZIN-2B. 15¢
—Cherry Queen. Brilliant cherry rose.....	ZIN-2CH. 15¢
—Crimson Queen. Deep crimson.....	ZIN-2CO. 15¢
—Enchantress. Pretty light rose with deeper center.....	ZIN-2E. 15¢
—Golden Queen. Golden yellow.....	ZIN-2GO. 15¢
—Grenadier. A bright dark red.....	ZIN-2G. 15¢
—Lavender Queen. Deep rosy lavender.....	ZIN-2L. 15¢
—Miss Willmott. Large soft rich pink.....	ZIN-2M. 15¢
—Orange Queen. Deep golden orange.....	ZIN-2R. 15¢
—Purity. Best white in any Zinnia.....	ZIN-2W. 15¢
—Rose Queen. Striking deep rose.....	ZIN-2Z. 15¢
—Scarlet Queen. Glowing deep scarlet.....	ZIN-2S. 15¢
—Giants of California Blend. A real blend of the above.....	ZIN-2X. 15¢

PRICES: Ounce, 70¢; ¼ lb. \$2.25; 1 lb. \$6.00, prepaid.

FANTASY TYPE: Petals are long, curved and pointed, resembling those of the night flowering Cactus; 4 inches across and 2 inches deep. This strain includes Star Dust and many other varieties; plants 2½-3 feet tall.

—Gold Dust. Pretty golden orange.....	ZIN-3G. 15¢
—Melody. Pretty orchid lavender.....	ZIN-3M. 15¢
—Orange Lady. Bright deep orange.....	ZIN-3L. 15¢
—Pink Frills. Soft flesh pink.....	ZIN-3F. 15¢
—Rosalie. An intense rose color.....	ZIN-3R. 15¢
—Star Dust. Beautiful canary yellow.....	ZIN-3SD. 15¢
—White Light. Best pure white.....	ZIN-3WL. 15¢
—Wildfire. Dazzling scarlet.....	ZIN-3WF. 15¢
—Fantasy Blend. Carefully made blend of above varieties.....	ZIN-3X. 15¢

HARMONY TYPE, SCABIOUS FLOWERED: Plants are 2½-3 feet tall, bearing numerous medium sized flowers resembling annual Scabiosa or harmony Marigolds. This improved strain has long stems and is excellent for cut flowers.

—Finest Mixed. Bright shades.....Oz. 75¢; ¼ lb. \$2.25..... ZIN-4X. 15¢

GAILLARDIA FLOWERED TYPE: Navajo Blanket Flowered. Flowers resemble Picta Double Gaillardia, in both form and coloring; brightly colored and perfect little fls.

—Finest Mixed. An All American winner..... ZIN-5X. 15¢

PUMILA TYPE: Dwarf double or Cut-and-Come-Again. In best pastel shades. The flowers are 2½-3 inches across, round in shape and good length stems for cutting. Sow in rich sandy loam; bloom in 50 days.

—Canary Yellow.	ZIN-6CY. 15¢
—Crimson.	ZIN-6C. 15¢
—Golden Orange.	ZIN-6GR. 15¢
—Pinkie. Pretty rose pink.....	ZIN-6P. 15¢
—Salmon Rose	ZIN-6SR. 15¢
—Scarlet.	ZIN-6S. 15¢
—Snowball. Pure white	ZIN-6W. 15¢
—Spun Gold. Butter yellow.....	ZIN-6SG. 15¢
—Sunshine Tints. Rich pastels.....	BIN-6ST. 15¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

A Canadian Letter

Mrs. A. M. Mac Pherson of Winnipeg writes an interesting letter about her flower growing, deer and other problems in her section of the world. Following are some special remarks:

In reading your magazine, I noticed you mentioned Alaska Cotton. I visited Churchill three years ago and I was so intrigued by it. I brot home some plants; they are alive and seem to be in good condition, however, they are not growing like they do up North. The one I planted in the home garden has rich sweet soil, while the one at the summer home at Hawk Lake, the soil is acid and sandy or gravel; I cannot understand what sort of soil suits it best.

At Churchill there is not a tree for hundreds of miles and the soil, what there is, must have a salt content, because the Arctic ocean beats against the rocks and it must reach the plants. Its a very beautiful vine and crawls over the boulders and each little leaf is rolled up and a beautiful shade of red. when this unfolds it is a glossy green with red veins.

The seed seem to be attached to a bit of white fluff-like cotton batting; I imagine a soil test would tell the secret.

No doubt but you will think I am a terrible person offering suggestions, however, I hope you will not be offended when I suggest something to improve your magazzine; rest assured it won't be a request to publish reports on all the garden shows, neither will it be pages on flower arrangements but I think it would be very helpful for a question and answer column, for example.

How does one raise the Bell Heather?

Editor's remarks: Your letter is especially of interest because you touch on many points I have been trying to get across to our readers besides there are some that is of special personal interest.

First, I want to thank you for your remarks on the Arctic Cotton. Why can't we get more readers to write about different flowers, like you have done? You could have included a little personal mention on your trips and about other items of interest on flowers you notice along the way; so many things can be seen about a flower when it is in its native territory. such things as shade, sun, protection of bushes, kind of soil and many many other such indications as to its requirements. It is also of interest to note the range of growth type as well as to flower form and the colors.

Your remarks about flower shows, etc., are also of interest because we, too, feel that the reports in themselves are not very interesting to the average reader and we have yet to receive a report from a show that gives any information about a winning flower, other than who won it. We do not mean that flower shows are not a good thing, for they are, but unless some especially good new plant is shown, there is little of interest other than local.

We wish more readers would write on flowers of which they have an opportunity to observe, and especially items on their uses and cultural requirements; too many just "describe" the flower.

About a "Question and Answer" column. We would be glad to do this, but to tell you the truth, there are very few questions asked! Probably our readers are better posted, and we do feel that this is true because our publication does cater more to the serious minded flower grower, rather than to the less posted growers. I am afraid that many of the "questions" in these columns are written at the same time as the "answer". However,

ZINNIA - ENDING LIST AGAIN

—Finest Mixed.....Oz. 70¢; ¼ lb. \$1.70; Lb. \$5.50, prepaid..... ZIN-6X. 15¢

PEPPERMINT STICK: A NEW medium sized Pumila-type-flower Zinnia. Flower petals are striped in various color combinations such as red and white, red and yellow, purple and white, carmine and white, orange and yellow; about 70% striped flowers.

—Finest Mixed..... ZIN-7X. 15¢

SUPER GIANTS: An extremely large flowered type.

—Floradale Scarlet. Uniform scarlet, cactus type blooms; slightly smaller than Dahlia-flowered; 2-2½ feet tall..... ZIN-3F. 25¢

—Luther Burbank. In interesting pastel colors..... ZIN-8LB. 15¢

—Super Fantasy, David Burpee. Mixed colors..... ZIN-3B. 15¢

—Finest Mixed. All super giants mixed..... ZIN-8X. 15¢

EARLY WONDER TYPE: Earliest of all Zinnias, for short season locations and autumn planting. Plants 18-24 inches tall, basal branching. many 3-4 inch flowers on long wiry stems having no laterals and almost no leaves.

—Fandango. Salmon cerise-pink..... ZIN-9F. 25¢

—Fiesia. The darkest red..... ZIN-9E. 25¢

—Gypsy. Shades of deep orange..... ZIN-9G. 25¢

—Padre. Bright scarlet..... ZIN-9P. 25¢

—Rose Pink..... ZIN-9RP. 25¢

—Blend. Above varieties mixed..... ZIN-9X. 20¢

LILLIPUT or POM POM TYPE: The Lilliputs are among the most popular Zinnias for cut flower use. Flowers are small, compact, symmetrical and on strong plants, 1½-2 feet tall.

—Black Ruby. A showy maroon..... ZIN-10B. 15¢

—Canary Gem. Clear canary yellow..... ZIN-10CG. 15¢

—Crimson Gem. Best crimson..... ZIN-10CR. 15¢

—Dainty Gem. A dainty bicolor rose..... ZIN-10DG. 15¢

—Golden Gem. Pretty golden orange..... ZIN-10GG. 15¢

—Lilac Gem. Best clear lilac..... ZIN-10LG. 15¢

—Pink Gem. Pure deep pink..... ZIN-10PG. 15¢

—Purple Gem. Best in purple..... ZIN-10PR. 15¢

—Salmon Gem. Beautiful salmon rose..... ZIN-10SM. 15¢

—Scarlet Gem. Brilliant scarlet..... ZIN-10SG. 15¢

—White Gem. Best pure white..... ZIN-10W. 15¢

—Pastel Blend. Only delicate shades..... ZIN-10PX. 15¢

—Lilliput Blend. From named varieties..... ZIN-10X. 15¢

PRICES: Above varieties, Oz. 70¢; ¼ Lb. \$1.90; Lb. \$6.00, prepaid.

CUPID ZINNIAS: Dwarf, compact little plants bearing quantities of button flowers smaller than the Lilliput type. For edging and pots.

—Goblin. Burnt orange, an unusual color..... ZIN-11G. 15¢

—Pixie. Clear canary yellow..... ZIN-11P. 15¢

—Snowdrop. Pure white..... ZIN-11W. 15¢

—Tiny Tim. Deep scarlet..... ZIN-11T. 15¢

—Cupid Blend. Blend of above varieties..... ZIN-11X. 15¢

PRICES: Oz. 70¢; ½ Lb. \$1.90; Lb. \$6.00, prepaid.

TOM THUMB ZINNIAS: Plants 6-8 inches, compact, covered with well formed flowers

of the Lilliput type. Some taller plants will occur and these are easily distinguished and rogued out. A very satisfactory little Zinnia for borders and pot culture.

—Tom Thumb Blend. Nice range of pastel colors..... ZIN-12X. 15¢

—gracillima. Miniature deep scarlet fls; pl 1½-2 ft..... ZIN-13G. 15¢

—linearis. Single orange striped petals; lasting well when cut; 8-10"..... ZIN-14. 15¢

—Haageana. Zinniettes. Small double fls, varied and variegated; in wide color combinations; nice for old fashioned gardens and miniature bouquets..... ZIN-15. 20¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

we do answer every question asked us and we are going to ask Will Ingwersen to say something on your question; he is an Englishman, you know, but ought to be better posted on Heather than we here in the U. S. A., where so little of this is grown.

Speaking of Churchill; I have always wanted to go there. The Arctic and the old fur trade in the far North has always been of great interest. There is a lake called Oxford lake, some 90 miles north-east from the northern end of Lake Winnipeg, that I have always wanted to visit, for a vacation, but never have been able "to get away". And every time I read a letter from some one in that section, I immediately get started to make the trip; recently we had a subscription addressed c/o the Hudson's Bay House in Winnipeg, which really had me ready to go but then winter is coming on so it will be next year!?

Our magazine is entirely different from any other publication. We are not trying to fill it up with display advertisements; its not a money making undertaking; its main object is to make it possible to distribute every known seed of value and to furnish all the information possible as to the uses and cult-

ural practices necessary. Much of this information has to come from readers. Just now we are changing the two column seed listing to one column, because it will allow more cultural information to be included as well as allowing the use of pictures. We hope our readers are going to like this change.

HELLEBORUS or CHRISTMAS ROSE

A great many seem to have trouble in growing Helleborus from seed. I suggest that you mix the seed in some moist sand or peat, place in a glass jar and hold in the refrigerator for 60 days, before starting the seed. It might be well to plant part of the seed in your usual way, as a check, and we shall appreciate reports on your operations.

No doubt, you will find Helleborus seed germinating better if the seed pan is kept in a dark place, rather than exposing it to the direct sun light.

To propagate by divisions, this is best done immediately after it blooms early in the spring or it can also be done in the autumn.

Do not disturb Helleborus too much; they are better when in partial shade.

HARDY VEGETABLES

Try planting the hardy vegetables, such as lettuce, carrot, beets, corn salad, parsley, in late October. Even in southern Michigan when they will germinate early in the spring as soon as the snow leaves the ground.

This will advance the harvest of these vegetables two or three weeks over spring planted seed.

One should get in a box full of good sifted loam soil, to which he has mixed in some course sand, that it will be handy early in the spring for transplanting or potting up plants, when it will not be possible to secure soil form out of doors.

Scabiosa caucasus, the perennial sort should be transplanted only in the spring.



Those wishing to give seeds for Christmas presents may either make up a special order or we will make one up of the new seeds that are continually coming in. If you have in mind a gardening friend very much interested in alpine or rock gardening, we can make some very attractive selections.

We will also include a copy of SAIER'S GARDEN MAGAZINE in which each kind included in the collection will be described and special culture directions given, so that the seeds will not only have value of so many packets, but the added interest of a complete introduction, so to speak. If these gift orders can be received by us early, we can have them all safely packed, and with your own gift card, also a postal card addressed to us acknowledging receipt, which we will immediately forward to you.

We suggest that the orders amount to either \$2.00 or \$3.00 for each gift; if you wish larger ones, they can be made up. The prices will be the same or less than the listed price, besides we shall use kinds that will be scarce and highly desirable; for instance, we have word in today's mail that we shall have a limited lot of the rare Lily rubellum; neither seeds or bulbs of this beautiful Lily are often offered for sale and there are few stocks of it anywhere. It is one of the loveliest of all Lilies, with large shell-pink bells on stems of about 2 feet. We also have a fine crop of the rare Primula nutans.

If the gift is to go to the warmer sections of the country, then we can make up a collection of the Menninger trees and shrubs and many more rare tropical flowers; or if the gift is to be orchids, we can supply a collection of 5 or 10 packets for \$5.00.

Orchid seed should be ordered early in November so as to be sure of having the proper stocks, as these come in small lots to us.

PIONEER SEED CO. DIMONDALE MICH.

Pioneer Seeds

ABRONIA - ACHILLEA - ACTAEA

ABRONIA (ah-BROH-ni-ah)

Sand Verbena. Dwarf or trailing plants with fragrant white, yellow or pink flowers. Treat as annual, sowing seed early indoor for summer bloom; they do better when planted direct in the open ground and in the South seed can be sown in the fall. Remove husk before planting; often slow in germinating. Sunny, light soils best.

umbellata gr. fl., Rose A pretty little trailer; rose colored fls; HHA.....**ABRO-1** 15¢

ACACIA (ah-KAY-shah)

Shrubs and trees mostly from warm regions and they can be grown outdoors in Calif. 18-20 degrees F as low as they can stand. Soak seed in hot water leaving this to stand 10-40 hours. They grow fast and are ornamental.

Baileyana. Attractive silver-blue fol; bright golden yellow fls; HHS.....**ACAC-3** 20¢

Farnesiana. Very fragrant much branched Sh; 10 ft; Texas; HHS.....**ACAC-5** 25¢

ACANTHUS (ah-KAN-thus)

Bear's Breech Perennials, thistle-like small shrubs; about 3 ft tall, fls white, rose or lilac on 18" spikes. They need heavy winter protection in the North; best in rich well drained soil. Seed sown in April will flower in Aug. THP.

—mollis v. latifolia. Broad glossy lvs; curious pale purple fls; HB.....**ACK-1.** 20¢

ACHILLEA (ak-i-LEE-ah)

Milfoil or Yarrow. Hardy herbaceous perennials easily grown in any fair soil in full sun. Flowers in clusters of small heads, white, yellow and pink making good cut fls. Seed planted indoors in March will flower same year. They make good border plants.

—Bakeri. Large rich yellow; 3 ft; extra good; HP.....**ACH-3.** 20¢

—chryscoma. Dense woolly foliage; bright yellow fls; 9"; HP.....**ACH-8.** 20¢

—Clavennae. Finest RG species; silvery lvs; white daisy fls; 6"; HP.....**ACH-9.** 20¢

—filipendulina. Has showy round heads; yellow; robust; 5 ft; HP.....**ACH-10.** 20¢

—Cloth of Gold. A pretty golden flowered variety.....**ACH-10C.** 20¢

—milleforium. Round heads of white fls; 2 ft; HP.....**ACH-20.** 15¢

—Parnica v. The Pearl. Double pure white; excellent for cutting; HP.....**ACH-24.** 20¢

—Taygetea. A new variety; lemon colored heads; 2-3 ft; HP.....**ACH-33.** 20¢

—Achillea Blend. All species and varieties.....**ACH-X.** 15¢

ACONITUM (AK-oh-nyt-um)

Monkshood. Herbaceous perennials, seeds germinate slowly, sow out doors in May or June in shade or they can be started indoors earlier but plants do not like transplanting; thin to 18" apart; bone meal is good as a fertilizer.

—Wilsonii. Handsome spikes, large porcelain blue fls, late, 3 ft, HP.....**ACD-9W.** 25¢

—Barker's Variety. Pretty novelty in amethyst-blue, 6 ft, HP.....**ACD-9B.** 25¢

—palmatum. Blue fls 2½ in. across; Himalayan Mts; HP.....**ACD-16.** 25¢

—napellus v. praecox. Blue fls; 4 ft; HP.....**ACD-16P(C).** 30¢

—lycoctonum. Wolfsbane, Hardy, yellow fls, 4 ft, moist soils, HP.....**ACD-14.** 25¢

ACROCLINIUM: see Helipterum.

ACROGEPHALUS

—sericus. Shrubby compact growth; soft pale blue fls; 1-2 ft; S. Rhodesia **ACRO-1.** 25¢

ACTAEA (ak-TEE-ah)

Baneberry, Cohosh. The showy terminal flowers develop into pretty white berries; they are useful in the rock garden, border or wild garden, doing best in shady places. Sow seed in late fall or spring; herbaceous perennials.

arguta. Very hardy, red berries, 2 ft, HP.....**ACTA-2.** 20¢

ACTINOMERIS (ak-ti-NOM-er-is)

Tall Sunflower-like native perennials for the hardy border or wild garden and resembling Helianthus and Verbesina. Grow like Sunflowers.

—alternifolia. Fls. yellow; 1-2" ac; rays; 8 ft; HP.....**ACTI-1.** 20¢

ADENOCARPUS (ad-ee-no-CAR-pus)

—decordicans......**ADEK-1.** 30¢

Grown in the GH in N or in open in the S; low shrubs from S. EU and Asia Minor.

ADENOPHORA (ad-e-NOF-o-rah)

Lady Bells. Erect perennials with fleshy roots, flowers in shades of violet. They are good in border, being grown like Campanulas; disturb as little as possible.

confusa. Erect, fls deep blue, 1" long; 3 ft, HP.....**ADEN-2.** 20¢

—Potaninii. Bell-shaped fls, in panicles, violet; 3 ft; HP.....**ADEN-20.** 20¢

ADONIS (ah-DOH-nis)

Hardy herbaceous annuals and perennials; some make good RG plant and grow well in both sun or shade; fls solitary terminal, crimson or scarlet with a dark colored base. Sow seed of all kinds either in the spring or fall; they are easily grown.

aestivallis. Summer Adonis. Scarlet flowers in June-July, 1½ ft; HP.....**ADON-1.** 15¢

AETHIONEMA. (eeth-ee-oh-NEE-muh) STONE CRESS. Cruciferae.

Annuals, biennials and perennials allied to Eberis and hardy up to Michigan. They are dwarf plants with flowers in terminal racemes and grown in the rockery or border, flowering in May and June; a light sandy soil in full sun is ideal.

—grandiflorum. Pink or rose fls; 1½ ft; HP.....**AETH-9(C).** 30¢

—schistosum. Pink or rose fls; Asia Minor; HHP.....**AETH-21(C).** 30¢

AGAPANTHUS (ag-ah-PANTH-us) Lily-of-the-Nile

Blue Lily of the Nile. Beautiful So. African bulbous plant, easily grown. Not hardy and in the North the bulb must be stored indoors during winter. They make ideal tub plants and last for years.

longispatus. A new sp., fls on 4 ft stems; free fl; compact.....**AGAP-5.** 25¢

orientalis. Large heads blue fls; 4 ft; S. Cal; HHP.....**AGAP-2.** 20¢

—alba. White flowered variety.....**AGAP-2W.** 20¢

—Agapanthus Blend. All species listed.....**AGAP-X.** 20¢

—africanus, Mixed. Lily of the Nile.....3 ft, mixed varieties; TP.....**AGAP-1X.** 30¢

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

AGERATUM - ALSTOEMERIA

AGERATUM (ager-A-tum)

Herbaceous annuals having tassel-like clustered heads; blue or white; they are easily grown, are tender in the N and must not be set outdoors till all frost danger is passed. They are useful as edging, in the front border, in porch or hanging baskets; popular. **Houstoninum**: This is incorrectly listed as *A. mexicanum*. The commonly grown Ageratums all come under this species.

- Blue Ball. Deep blue ball-shape plant; compact; 9"; HHA..... **AGER-3B** 15¢
- Blue Bedder. Lavender-blue; compact, 4"; pretty for beds; HHA..... **AGER-3C** 15¢
- Blue Cap. Rich blue, dome-shape plant; RG; extra nice; HHA..... **AGER-3D** 20¢
- Blue Star. Deep blue, 6", very nice for edging; HHA..... **AGER-3E** 15¢
- Dwarf Imperial, White. Popular bedding sort; strong growth..... **AGER-3RW** 15¢
- Blue..... **AGER-3RB** 15¢
- Fairy Pink. Softest salmon-pink; edging or pots, 6"; HA..... **AGER-3Y** 20¢
- King of the Blues. Low compact plants; deep blue; HHA..... **AGER-3F** 15¢
- Little Dorrit. Pretty deep blue; fine for edging and pots; HHA..... **AGER-3G** 15¢
- White. A pure white strain; fine bedding, boxes and border..... **AGER-3GW** 15¢
- Midget Blue. A 2-3 in. plant; compact; fine for edging; HHA..... **AGER-3H** 15¢
- Purple Perfection. Deepest blue, 9"; fine for boxes or bedding..... **AGER-3J** 15¢
- Silver Star. Pretty dwarf white, 6 inches, HHA..... **AGER-3K** 20¢
- Swanley Blue. Azure-blue; thickly bunched, 8"; HHA..... **AGER-3L** 15¢
- White Queen. Pure white; 8"; dandy; HHA..... **AGER-3M** 15¢
- White Beauty. Considered the best white; 7 inches; HHA..... **AGER-3P** 15¢
- Zuriblan. Pretty dwarf blue novelty from Switzerland; HHA..... **AGER-3Z** 15¢
- Mixed. Blend of all the above garden varieties..... **AGER-X** 10¢

AGRIMONIA (ag-rim-MOH-nee-ah) Agrimony

Erect perennial plants with small yellow fls in racemes followed by burr fruits; shade. —odorata. Yellow; 3 feet; Europe; HP..... **AGRI-2** 20¢

AGROSTEMMA: see *Lychinis*.

AGROSTIS (ah-GROS-tis)

A group of tufted annual and perennial ornamental grasses.

nebulosa. Cloud Grass. Dwarf and neat; plant indoors early; 1 ft; HA..... **AGRO-5** 20¢

AJUGA (aj-YEW-guh) BUGLEWEED. Labiatae.

Herbaceous annuals and perennials for the rockery or border; flowers in whorls in terminal spikes, blue, white or rose. They are easily grown.

—*genevensis*. Blue; 10 in. tall; HP..... **AJUG-4(C)** 30¢

ALLAMANDA (al-ah-MAM-dah)

Shrubs and climbers native of Brazil. Easily grown in the greenhouse in N. In the South they thrive in the open. Showy purple or yellow flowers.

cathartica. Pretty vine; golden yellow fls 3" across; HHA..... **ALLA-1** 20¢

ALLIUM (AL-i-um)

Flowering Onion. Nearly all those listed here are hardy perennials. They are attractive plants in the border, some in the rock garden. Sow seeds as for perennials, usually in early spring. Rich, sandy soils best; full sun.

- albopilosum*. Lilac in umbels 8 inches across; 3 ft; dandy, HP..... **ALUM-2** 25¢
- ammophilum*. Golden yellow flowers; Europe; HP..... **ALUM-4** 30¢
- cernuum*. Nodding buds, erect fls; lavender to white, May; 1 ft; HP..... **ALUM-21** 20¢
- falcifolium*. An extra good RG species; 4"; deep rose; HP..... **ALUM-23** 25¢
- Gayeri*. Very pretty 14 inch plant; rose-pink fls; HP..... **ALUM-37** 25¢
- giganteum*. Bright lilac; Cent. Asia; 4ft; HP..... **ALUM-38(C)** 30¢
- karataviense*. Whitish fls with purple mid-rib; 1 ft; HP..... **ALUM-44** 25¢
- neopolitanum*. Large 3 inch white flowers; 1 ft; S EU; HP..... **ALUM-58** 25¢
- nigrum*. (A. speciosum) Violet fls; 2 ft; HP..... **ALUM-60** 30¢
- oreophilum*. Purple in many flowered umbels; Caucasus; HP..... **ALUM-67** 40¢
- peninsulare*. Rose-purple fls in loose umbels; 1 ft; HP..... **ALUM-72** 25¢
- praecox*. White fls petals, bright purple mid-vein; 1 ft; HP..... **ALUM-74** 15¢
- pulchellum*..... **ALUM-75** 40¢
- pyrenaicum*. White flowers with a green mid-rib; 3 ft; HP..... **ALUM-78** 20¢
- roseum*. Rose fls in loose umbels; 18"; HP..... **ALUM-81** 20¢
- rubrum*. Flowers replaced by reddish bulbels; 1 ft; Rocky Mts; HP..... **ALUM-83** 30¢
- Schoenopaeum v. sibiricum*. CHIVES. Rich purple fls; 1 ft; HP..... **ALUM-87S** 20¢
- senescens*. (A. montanum) Lilac in many fl'd umbels; 2 ft Eu; HP..... **ALUM-90** 25¢
- sphaerocephalum*. Tall pretty globular deep red heads; HP..... **ALUM-93(W)** 30¢
- stipitatum*..... **ALUM-96** 30¢
- tanguticum*. Bluish lilac with darker midrib, in dense umbels; HP..... **ALUM-99** 30¢
- tibeticum*. Deep blue flowers; 6"; Tibet; HP..... **ALUM-102** 35¢
- triquetrum*. Large white fls in loose umbels; 18"; HP..... **ALUM-104** 25¢
- tuberosum*. Leaves not hollow; July-Sept; 18"; HP..... **ALUM-105** 20¢
- unifolium*. Pink Allium. Calif; 15"; bright rose; HHP..... **ALUM-106** 20¢
- Allium Blend. A valuable collection of Allium species..... **ALUM-X** 20¢

ALOE (AL-oh)

Perennial succulent plants native of the Cape. They make ornamental pot plants in the North. Grow in sandy soil with a little peat and rotted manure and small chunks of old mortar or lime; keep on dry side.

excelsia. From So. Rhodesia..... **ALOE-24** 20¢

ALONSOA (al-on-SOH-ah)

Mask Flower. Easily grown in a warm locaion. Sow seed indoors in spring and set plants out after frost danger; for growing indoors in winter, sow in summer and set plants indoors early in the fall.

—*Warscewiczii*. Cinnabar or scarlet-red; 3 ft; Peru; grow as an annual..... **ALON-7** 20¢

Alonsoa Blend. All the above kinds..... **ALON-X** 15¢

ALSTROEMERIA (al-stre-MEE-ri-ah)

So. American greenhouse plants grown from tuberous roots that are treated as bulbs. Rich soil and a sunny position needed. Seed can be planted in pots, August or later, which bloom the following summer.

- aurantiaca*. Orange spotted red, free, very hardy, 3 ft; HP..... **ALST-1** 20¢
- augustifolia*. Pink, orange or flame, 3 ft; HP..... **ALST-1A** 20¢
- Ligtu*. Pink, red and yellow fls; 2 ft; HP..... **ALST-5** 20¢
- hybrids*. Peruvian Lily. Pink, red or yellow; 2-3 ft; HHP..... **ALST-6** 25¢
- Pelegrina*. Lily of the Incas. Pink spotted purple; 1 ft; HP..... **ALST-6W** 25¢
- alba*. Pure white form; very nice; 1 ft; HP..... **ALST-X** 20¢
- Blend. All kinds mixed..... **ALST-X** 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Rock Garden Species of Penstemons

The miniature Penstemons, both shrubby and herbaceous, have a charm and variety that is hardly duplicated in any other group of flowers. Many of these beautiful little plants, too, have not been available to the gardener before and we take pride in being the foremost introducer of this genus.

The species considered here are the dwarfs, most of which have quite ornamental foliage and that make attractive clumps or mats.

P. linarioides coloradoensis has silvery gray leaves that remain bright and fresh all summer and usually all winter, too. If planted in the rocky part of the garden the branches tumble over the rocks in a pleasing manner.

P. thompsonae, a Sedum-like shrublet with tiny gray spatulate leaves, almost white in appearance. It is not over 1 inch high and makes little mats to 6 inches across. The flowers are violet and produced on tiny erect spikelets. Hardy and stands the sun and drought (deserts of north central Nevada):

P. acaulis is a challenge to the good flower grower. Its requirements are for desert treatment. It resembles a tiny Phlox, with filiform leaves, growing in small clusters.

The tufts grow as much as 10 inches across but usually 2-4 inches. Its little blue flowers sit on top of the pan cake clumps of foliage; native of the foothills of the Uinta Mountain range of Utah.

P. exilifolius has white erect flowers on slender airy spikes. It forms a neat light green mound with short grassy leaves very similar to the cushion *Dianthus*.

P. paysoniorum, a dwarf only 6 inches high and found in the dry sandy washes on the desert plains of Wyoming. The leaves are dark green, shiny and in rosettes close to the ground. It is floriferous; medium blue in color and small; found on desert plains of Wyoming.

P. halli, another dwarf *Glabri*, with immense flowers in proportion to the size of the plant. It makes attractive rosettes of shiny dark green leaves above which forms erect 6 inch stems that are covered with its rich deep red purple flowers. Try it in a well drained place protected from the sun by a rock; found high on mountain peaks in the Colorado Mountains.

P. virens, a beautiful and dainty plant that grows in cut banks and gravelly hillsides. It makes a thick mound with bright green lanceolate leaves. The flowers are a cloud of blue, on stems 6-8 inches high, giving the bloom an airy effect; the flowers are small but numerous. Found in Colorado and southwest Wyoming.

P. Tolmiei is a charming plant, a mat former, the root stocks rooting as they extend along the ground. The leaves are a deep green, lanceolate shaped and numerous: The flower stems are 8-12 inches high, topped with small, compact clusters of tiny red-purple flowers; they are found in the Cascade mountains of Washington.

P. heterophyllus, subspecies, *purdyi*, is a dwarf decumbent form and does well for covering dry banks but it is tender in the northern section of the country. It makes a very attractive low mound with olive-green leaves with a touch of bronze, making it very ornamental. The flowers are blue, purple or rose or in combinations of these, making the effect spectacular.

Continued on Page 159

Bromeliads

By Victoria Padilla

LONG TIME -- WILL SEE

For a plant that stays a long time in bloom one will have to go far to find one that surpasses the Aechmea. Not only for weeks is it an arresting sight, but for months its colorful spike attracts attention of all who see it. The writer has one species, Aechmea fulgens, discolor, that has maintained a perfect spike of brilliant red for the past six months. and her Aechmea fasciata, a favorite in the old world because of its lovely flower head of soft pink and blue, will last equally as long. Because of their long-lasting qualities these plants are popular in Europe as cut ion, however, they may be grown successfully are comparatively unknown in this country.

The Aechmea is related to the Pineapple in that it is one of the members of the Bromeliad family. Native to Brazil where they grow on trees alongside orchids, they are almost entirely epiphytic. Under cultivation the botanic gardens or growers here; second-in pots, baskets, on moss walls, attached to logs, and in the open ground. They prefer a sheltered location in part shade, a light porous soil of leaf mould and sand, and a moderate temperature that will not fall much below 35 degrees Far. They like plenty of water during the summer but like to be kept dry during the winter. They are comparatively free of disease and pests, although snails love to live in their center cups. They make ideal plants, for they will thrive where it is quite dark; and their handsome inflorescence adds much to indoor decor.

Aechmeas consist of a leaf cluster or rosette, out of the heart of which comes the bract and flower head. The plants vary in size and coloring. The flower may be brilliant red and blue, orange and purple, pink and blue, yellow and black; whereas the leaves may be a soft glossy maroon, green with yellow stripes, gray banded with white, greenish gray and purple, or just plain green. No matter what color combination, all are highly decorative and very fascinating.

Some plants bloom faithfully once a year, while some bloom once every two years. After the plant has flowered, it sends out offshoots, and after a time the original plant will die. Propagation of Aechmeas is chiefly by their offshoots, which are best cut off the mother plant when they are about 5 or 6 inches high. They may then be planted in a small pot and very shortly will form their own root system and grow rapidly. For the average person, raising Aechmeas by seed is not to be recommended. In the first place, seeds are very scarce, and the only source of supply are growers in Europe and a few of in winter, generally around the holiday season the seeds are not too easy to germinate; and lastly, the plants take a long time -- a period of years which varies with each variety -- to flower from seed.

There are many delightful varieties which the amateur will enjoy owning and which are easy to flower. Aechmea fasciata, the "Urn Plant," mentioned above is highly prized. Aechmea Foster's Favorite is highly desirable because of its lovely, smooth lacquered wine-red leaves. Its drooping berry-like flower stalk with dark blue flowers bloom stunning yellow flower head add much where son. Aechmea caudata variegated is a favorite in Southern California, for it is easily grown out of doors. It is a large plant and

ORCHID SEED YEAR AROUND

We can supply the following ORCHIDS all during the year. In some cases it may be 30 days in making delivery but usually the seed will be in stock.

Orchid seed is as fine as dust and is not easy to grow; we will try to have some articles on them in future issues.

The listing will be corrected later to the latest botanical classifications; in many cases of foreign classifications, the old botanical names are still used.

PRICE: \$1.00 per Pkt; 5 for \$4.00.

AERIDES longicormu.

- odoratum.
- racemeformis.
- vandarum.

ARUNDINA bambusaefolia.

BULBOPHYLLUM Leopardium.

CALANTHE alismaefolia.

- biloba.
- brevicornu.
- herbacia.
- puberula.
- densiflora.

CIRRHOPELALLUM gutulatum.

COELOGYNE cristata.

- occulata.
- flacida.
- Fescenscens.
- corymbosa.
- elata.
- ochracea.
- ovalis.

CYMBIDIUM aloifolium.

- Cochleare.
- Devonianum.
- elegans.
- ensifolium.
- giganteum.
- longifolium.
- Whiteas.
- pendulum.
- grandiflorum.
- gammeanum.
- eburneum.
- Mastersii.
- Lowianum.
- trachyanum.
- Simonsianum.
- Zaleskianum.
- lancifolium.
- cyprefolium.

CYPREDIUM insigne.

- venustum.
- Fairreanum.
- hirsutissimum.
- insigne Harefield Hall.
- insigne Sanderiae.
- spicerianum.

DENDROBIUM amoenum.

- chrysanthum.
- aureum.
- amplum.
- densiflorum.
- Gibsonii.
- fimbriatum.
- rotundatum.
- longicornu.
- peirardie.
- Hookerianum.

- nobile.
- moschatum.
- moschatum v. Cupreum.
- transparens.
- chrysotoxum.
- crepidatum.
- Farmerii.
- primulinum.
- Wardianum.
- devonianum.
- draconis.
- falconeri.
- infundibullum.
- formosum.
- formosum giganteum.
- littuiflorum.
- Jamesianum.
- ochreatum.
- Jenkinsii.
- nobiliscens.
- thyrsiflorum.
- nobile alba.....
- nobile Sanderianum.
- nobile v. Amessiae.
- nobile v. nobilius.
- nobile v. Ballianum.
- nobile v. Wallichianum.
- peirardie v. Lantifolium.
- transparens v. album.
- densiflorum aureo flavum.
- densiflorum v. albiflorum.

Pkt. \$2.00

Pkt. \$3.00

ERIA convallariodes.

- coronaria.

PHAIUS maculatus.

- mishmehsis.
- wallichii.
- grandifolius.
- wallichii v. Assamica.

PLEIONE Hookeriana.

- humilis.
- maculata.
- maculata praecox.

RENANTHERA imschootiana.

- coccinea.

SACCOLABIUM Blumei.

- ampulaceum.

RHYNOSTYLIS retusa.

THUNIA aba.

- Marshalliana.
- venosa.

VANDA coerulea, Dark Blue.

- Light Blue.
- cristata.
- pumila.
- alplna.
- Teres.
- teres alba.
- Roxburghii.
- undulata.
- Clarkei.
- cathcartii.
- Agnes x Joaquim.
- teres giganteum.
- teres Audersonii.
- Parishii.
- v. Mariottiana.
- Denisoniana.

Pkt. \$3.00

The above list will not appear for another six months and it can be used for the entire year. We will add descriptive matter in the next listing.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

its striped green and white leaves and its bearing large quantities of powder-puff-like tropical effect is desired.

Aechmea Weibachii should be in everyone's collection. Its leaves are of a bronze-salmon and green, and its long flower spike ends in a stunning cluster of red berries topped by lavender petals. It has lived through freezing weather for the writer, which is unusual for a plant that is native to the jungles.

Rudis: ROO-diss; wild; not cultivated.

GEORGE RUSSELL PASSES AWAY

Continued from Page 145
as we have planned; in the meantime, we would be pleased to have letters from any of our readers who have come in contact with Mr. Russel, their remarks would certainly be interesting to add to what we already have.

Our subscription price will be changed to \$2.50 very shortly. We had hopes of keeping the present price till the first of the year:

Sundial Mottoes

By Ann Hanley

While the astrolabe, superseded by the sextant, is rarely seen to-day except as a curio, the sundial like the weathervane still has a semblance of use. "Timepiece of the shadows" as it has been called it makes a valuable addition to a garden setting, where its white pillar balances the bird bath as a useful ornament. Through the ages it has followed the trend of agriculture from the Greek to Georgian which may still be copied.

What a sundial needs is a good vista with greensward in front, a firm base, a well cast an interesting motto. The dial may be purchased ready to mount on the pedestal, the tops being cast in one piece. While the correct setting of the plate is most easily managed by taking the noon reading of the sun on one of the four times a year where sun time and clock time agree, these dates differ according to Greenwich or Washington time, so it is well to consult a meteorologist as to exact date for the place. The local weather man will no doubt set you right.

Mottoes are not so often used to-day as they were when sundialing (before clocks were introduced) was a special brand of education, about which text books were written. But mottoes always add interest and many of them have historical value. French mottoes for brevity as: L'Avance - I move forward; Allez Vous - Pass On. Latin mottoes were always popular as Carpe Diem Seize the Moment; Tarde sed Certe - Slow but Sure. From Petrarch comes: Volano L'or, I Giorni, Gl'anni E I Mesi, - Hours, Days, Months, Years, all fly.

English mottoes are numerous and interesting. Harriet Martineau chose, Come Light Visit Me! Then there is: Old Father Time Stands Still for None, This moment here, the next He's gone.

Let Others tell of storms and showers,
I'll only count your sunny hours.

or

Noiseless falls the foot of Time,
Which only falls on flowers.

Several verses of Omar Khayyam would make suitable mottoes for sundials:

Lo! the Hunter of the East has caught
The Sultan's turret in a noose of light,

or:

The Bird of Time Has but a Little way
To fly - -And Lo! the Bird is on the wing:

Of facetious mottoes there are many, of which that of the Inns of Court, Inner Temple, London had an amusing story. When the artist went to arrange about the motto, the testy old gentleman in charge told him: "Begone about your business!" The benchers so enjoyed the joke that they chose this for their sundial motto.

Charles Lamb who loved sundials thought that Adam could scarcely have missed having one. The oldest on record is an Egyptian one once in a Berlin museum: The translators of the Bible cited: Ahaz (Issiah xxxviii:8) with one: "Behold I will bring again the shadow of the degrees, which is gone down in the sundial of Ahaz, ten degrees backward."

Shakespeare has several suitable mottoes in his sonnets. Thou by the Dial's shady Stealth must Know,

Time's thievish Progress to Eternity. (LXXVII) and in the same: The Dial will show how thy precious minutes waste.

John Greenleaf Whittier once wrote a sundial motto:

"With warning hand I mark Time's rapid flight

From Life's glad morning to its solemn night:

Yet through the dear God's Love I also show

There's a light above me by the shade below."

Austin Dobson like so many English poets honoured the sundial:

'Tis an old sundial, dark with many a stain,

In summer crowned with drifting orchard bloom,

Tricked in the autumn with the yellow rain,

And while in winter like a marble tomb:

But round about its gray, time-eaten brown,

Lean letters speak, a worn and shattered row:

"I am a shade, a shadow; so are thou.

I mark the time; say gossip, doest thou so?"

CIVILIZATION!

Have you ever thought just what our civilization exactly is? Probably, I should say, what the results of our civilization are.

In reading books written a hundred years or more ago, one often comes across such remarks as, "when affairs of all kinds were more leisurely and easy-going than they are now". This was written a hundred years ago!

Today, with all our knowledge and modern machinery, a bushel of wheat never cost so much to produce or as much to buy, as it does today, right here in the U. S. A!

Rupicolus: roo-PIKK-ol-us; growing on cliffs

Patens: PAY-tenz; spreading.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 20¢ per line of seven words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

PLANTS FOR SALE

AFRICAN VIOLET LEAVES. 12 for \$1.00 named varieties, plants 3 to 6 in. tall 3 for \$1.00, my choice. Gypsy Series leaves 20¢ each 7 for \$1.00; plants 2 for \$1.00. Roseonna leaves 3 for \$1.00; Please add 25¢ postage. Mrs. Sophia M. Baker, 2733 S. E. 35th Place, Portland, 2, Ore.

CUTTINGS: \$1.50 per dozen; house plants mixed or Begonias or Sweet Scented Geraniums, Mints, herbs, wild ferns; prepaid. Mrs. H. C. Sanborn, RFD 1, Thetford Center, Vt.

HAVE YOU PLANTS FOR SALE? Then list them in these columns, especially if you have something extra choice, the cost is very low and returns good; special rates on extended listings.

HELP WANTED

HELP WANTED. We have a good position open for a young woman who has had training in botany; should be able to type. Pioneer Seed Company, Dimondale, Mich.

SITUATION WANTED

SEEDS FOR SALE

HERB SEEDS AND PLANTS: We specialize in raising herb seeds and grow all popular and many rarer kinds. Also field-grown perennial herb plants. Our descriptive folder lists many varieties at reasonable prices. **PLANTATION GARDENS,** RFD 2, Box 193, Lynchburg, Virginia.

DODECATHEON CUSICKII. Fresh seed nowready, 50¢ per packet. Pioneer Seed Co., Dimondale, Mich.

DAYLILY SEEDS hand pollinated from choice hybrid reds, rose, pastels. Fresh seed (mixed only) 10 for 30¢; 40 for \$1.00. Ffoulkes, 610 Bryan, Jacksonville, 2, Fla.

RARE PLANTS. If you grow rare plants you will find these columns your best outlet. Try a small ad and see.

TREE AND SHRUB SEEDS: We carry in season over 800 tree and shrub seeds; if you need these seeds be sure you get our list. Pioneer Seed Co., Dimondale, Mich.

BEAUTIFUL INDIAN ORCHIDS Himalayan Flower Bulbs, Anemone, Sternbergia, Iris, Tulips, Unusual charming seeds. G. Ghose & Co. Townend, Darjeeling, India.

MAKE USE OF THE CLASSIFIED SECTION - IT'S YOURS

A NEW GENTIAN?

By Ann Hanley

Hybrids generally take a long time to get their characteristics settled. That was why it seemed perfectly safe to plant seed of *Gentian hanscombiensis*, for it has been established in English gardens a long time. The offspring of *G. septemfida* and *G. lagodechiana*, the catalogs described it as having a mid-blue flower with white dots.

Of two plants from one lot of seeds, I got anything else. They germinated quickly compared with *G. lagodechiana* which took three months the last lot I planted. The blossoms were eagerly watched for the second year. The leaves of one plant resembled *G. septemfida*, but those on the other were larger and of a waxy appearance. The blossoms were solitary, terminal, but the color was the blue of *Jasione perennis*, the second year there were several terminal, very like the *sempemfida* parent. But the blossoms were quite unlike either parent. The five petals recurved, making a lovely tube, without spots. Unlike most *Gentians* these did not close at night or on dark days, but remained open until they faded. The plants were very healthy and seeded freely.

The other seedling also showed marked variation. Its flowers were petalled and in color a little lighter than the former. But the curious thing about them was that between each petal was a short petal-like point of the same color not more than a third the length of the petals. This plant seeded freely and in other respects behaved like other *Gentians*.

Now, I am wondering if I have an entirely new *Gentian* or if someone made a mistake in gathering the seed. This is something that has come my way several times since I have been gardening. Once I sowed what was labelled, *G. lagodechiana* only to get quantities of *G. scabra* Buergeri, which I did not need. On another occasion I ordered *Ramonda* seed from a very reputable seed house. The seed came readily and were treated to *Ramonda* care, which probably delayed their flowering until the third year, when they proved to be beautiful white *Campanulas* of a variety I had never seen. The flowers formed a complete triangle of branches, quite short and covered with large white bells.

ROCK GARDEN PENSTEMONS

Continued from Page 155

P. diphyllus s.s. *triphyllus*, a sub-shrubby plant with stems that are of a trailing effect, making them attractive for the rock garden. It is one of the few *Penstemons* with deeply cleft or pinnately toothed leaves. They are a dull green and red-purple in the autumn. The flowers are borne in panicles and while the individual flower is small they are in great numbers. The petals are blue with magenta throats and really effective when combined with the leaf color. It is almost an everbloomer; found in western Montana.

P. laricifolius of which the above is a sub species is much alike in appearance, habit of growth and choice of position but this has pink or lavender flowers. The name means leaves like a larch and is found farther west in Woming.

P. harboursi is a true alpine and found in the rock screes above timber line. Clear lavender flowers on erect 6 inch stems with the foliage mat often prostrate. Found in the McClellan mountains in the Colorado Rockies.

GET EVERY ISSUE — \$2.00 PER YEAR

AMBERBOA - ANAGALIS

ALTHAEA (al-THÉE-ah)

Hollyhock. Flowers in terminal erect racemes or spikes; easily grown in good loam. Mostly perennial; the biennials, of which the common Hollyhock is the principal one can be started in July for flowers the following summer.

ficifolia. Fig-leaf Hollyhock. Deep yellow fls; 6 ft; HP..... **ALTH-3** 20¢
—*hybrids*. Many collar combinations, 6 ft; HB..... **ALTH-3H** 20¢
rosea. The common Hollyhock, which see.

ALYSSUM (ah-LIS-um)

Magwort. Annuals and perennials, trailing to 1 ft in height, and all showy; the perennials bloom very early in the spring; the annuals during early summer

A. maritimum. Under this heading are listed all the common annual Sweet Alyssum. Botanically, they belong under *Lobularia maritima*. They are all hardy annuals, doing best when started early. They are used in edging or bedding, in pots, baskets or boxes as well as in the rock garden. All low growing and very free flowering.

Carpet of Snow. Compact strain, pure white; 3"; HA..... **ALYS-15C** 15¢
Snow Cloth. Very dwarf, compact, snow white; 3"; HA..... **ALYS-15S** 15¢
Little Gem. Compact 6" plants, pure white; HA..... **ALYS-15G** 10¢
Lilac Queen. Deep violet, 6", very pretty; HA..... **ALYS-15Q** 15¢
Violet Queen. Uniformly deep violet, compact, fragrant, 6", HA..... **ALYS-15V** 15¢
Sweet Maritimum. Very fragrant; 1 ft, white; boxes or baskets; HA..... **ALYS-15M** 15¢
Mixed Annual Alyssum. All varieties..... **ALYS-15X** 10¢

—*arduini*...... **ALYS-6** 25¢
—*idaeum*. Silvery green foliage; fls whitish; Crete; HHP..... **ALY-12** 25¢
—*Markgraffii*. Bright yellow, dense panicles; 1 ft; Albania; HP..... **ALYS-17** 30¢
—*Moleleodorifianum*. Yellow fls; fol silvery; Bosnia; 5"; HP..... **ALYS-19** 30¢
—*murale*...... **ALYS-21** 30¢
—*orientale*. Collected in Albania..... **ALYS-22** 30¢
—*spinosum*. White or pinkish; woody, 1 ft; S EU; HP..... **ALYS-31** 20¢
—*lutescens*. Yellow form of *Lobularia maritima*..... **ALYS-16** 25¢
montana. Trailing, deep yellow; 3"; RG; HP..... **ALYS-20** 20¢
saxatile v. Gold Dust. Spring flowering; 1'; golden yellow; HP..... **ALYS-26G** 15¢
—*compastum*. Compact masses, yellow, April-May, 1 ft; HP..... **ALYS-26C** 20¢
—*Silver Queen*. Primrose fls; fine for RG; 1 ft; HP..... **ALYS-26S** 20¢
—*sulphureum*. Pretty sulphur-ellow; 1 ft, HP..... **ALYS-26U** 20¢
Rock Garden Specise. Contains a collection for RG; extra choice; HP..... **ALYS-34X** 20¢

AMARYLLIS (am-ah-RIL-is)

One species, *A. Belladonna*, of which there are several varieties or forms. Just lately the botanical name has been changed to *Brunsvigia rosea*. The usual time for fresh seed is April to June and should be sown as fresh as possible.

—*Mammoth Red*. California grown..... **AMAL-1** 25¢
—*Mammoth Red and White*. Red flowers with some whites also..... **AMAL-1W** 25¢

AMARANTHUS (am-ah-RAN-thus)

Amaranth. Annuals native in mild climates and grown for their colored foliage and the heavy red flowers; they are easily grown and will produce better flowers if grown in poor soil; for that dry bank, these should be fine; full sun.

caudatus. Love-lies-bleeding. Long drooping red fls; 4 ft; TA..... **AMAR-1** 10¢
—*oeschberg*. Erect, dark red flowers; HA..... **AMAR-1B** 15¢
—*viridia*. Same but with white fls; HA..... **AMAR-1W** 15¢
—*nanus*. A dwarf form, HA..... **AMAR-1N** 15¢
hybridus hypochondriacus. Prince's Feather. Showy; red; 3 ft; HA..... **AMAR-2H** 20¢
—*splendens*. A rich red with brilliant red fol at top of plant..... **AMAR-4D** 15¢
—*salicifolius*. Fountain Plant. Slender leaves, 3 ft; HA..... **AMAR-4S** 15¢
—*tricolor*. Joseph's Coat. Erect; leaves blotched and colored; 3 ft TA..... **AMAR-4** 15¢
—*Molten Fire*. Maroon fol; each branch tipped crimson; 4 ft; TA..... **AMAR-4F** 15¢
—*Pigmy Torch*. Dark crimson; dwarf plants; 1 ft; TA..... **AMAR-4P** 15¢
—*Sunrise*. Bronze crimson and scarlet; 3 ft; TA..... **AMAR-4R** 15¢
Amaranthus Blend. All kinds mixed; HA..... **AMAR-X** 10¢

AMBERBOA (am-bur-BOH-ah)

Annuals with jaggedly cut or divided leaves and flower heads in purple, blue or pink resembling Bachelor Buttons. Easy grown from seed and should be planted where plants are to grow; half hardy annuals native of Spain and Morocco.

muricata. Easy; stars of pale purple with creamy centers; HHA..... **AMBR-2** 20¢

AMMOBIUM (a-MOH-bi-um)

Australian everlastings, perennial, with solitary heads of yellow fls surrounded by silvery-white bracts. Easy to grow, usually as an annual but can be planted in the fall. Flowers remain white if cut early.

AMPELOPSIS (am-pe-LOP-sis)

—*alatum*. Winged Everlasting. Foliage white-woolly, 3 ft, heads 2" ac..... **AMOB-1** 15¢
Tendrill-climbing deciduous shrubs belonging to the Grape Family. Grows well in any fair soil; some not hardy in the North.

—*quinquefolia*. Virginia Creeper, American Ivy. (Parthenocissus)..... **AMPL-13** 20¢
—*Veitchii*. Boston Ivy. (Parthenocissus)..... **AMPL-12** 20¢

AMSONIA (am-SOH-ne-ah)

Perennials 1-3 ft tall, having bluish flowers followed by rather attractive milkweed-like pods; border, easily grown.

Tabernaemontana. Star fls of soft blue; May-June; HHP..... **AMON-2** 15¢

ANACYCLUS (an-ass-SYE-klus)

A race of daisies from Med. regions related to *Pyrethrum*; a few species are very desirable dwarf perennials with finely cut foliage and large white or yellow daisy-like flowers with backs of the rays striped with brilliant red. Sunny, stoney positions best.

—*Anacyclu Blend*. All kinds mixed; HP..... **ANAC-X** 15¢

ANAGALLIS (an-ah-GAL-is) Pimpernel

Low growing annuals, biennals and perennials having pretty little star-like flowers in red, blue and white that grow out of the axils of the leaves on hair-like stems. Very free flowering; some especially nice for the rock garden. Best in a loose warm soil.

—*linifolia*. Mixed. Large flowered..... **ANAG-2X** 20¢
—*Scarlet*...... **ANAG-2S** 20¢

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

ANDROSACE - ANTENNARIA

ANAPHALIS (an-NAF-al-iss)

White woolly perennials for the rock garden or border; small white flowers and can be used as everlastings.

margaritacea. Pearl Everlasting. Fine for dry fls; white; 3 ft; HP **ANAP-1** 20¢
nubigena. Himalayan alpine for RG dwarf woolly; white fls; HP **ANAP-4** 25¢

ANCHUSA (an-KEU-suh)

Excellent perennials for the summer border in a sunny place; hardy, easily grown, flowering July-August or even later. Comes mainly in blue colors. Best in good soil with plenty of old manure. Be careful not to damage tap root when transplanting.

azurea, Dropmore Variety. Lovely bright blue fls; 4 ft; HP **ANCH-2D** 15¢
Opal. Same as above but a lighter pretty blue; HP **ANCH-2P** 15¢
capensis, Blue Bird. Vivid indigo-blue, compact, 1½ ft, HA **ANCH-4B** 15¢
Anchusa Blend. All kinds and varieties; HP **ANCH-X** 15¢

ANDROSACE (an-DROS-ah-see)

Rock Jasmine. True alpine annuals and perennials for the rock garden or low border. Many require special handling in the alpine or rock garden. Leaves usually tufted or in rosettes and often woolly. Flowers small in red, pink or lavender, usually borne in rather flattened rounded clusters. Requires a dry gritty, well drained soil but not too suffer from drought. Seed may remain in the soil over a year.

carnea v. brigantia. Has narrow leaves and white flowers **ANDR-3B** 30¢
cylindrica. Tight cushions; 1" tall; choice alpine; HP **ANDR-6** 50¢
Hookeri. Pretty little plant, brilliant pink, 2", HP **ANDR-10** 25¢
sarmentosa chumbyi. Easy RG plant; mats of small rose fls; 3"; HP **ANDR-18C** 25¢
sempervivoides. Fine RG plant; umbels of pink fls; 3"; HP **ANDR-19** 25¢
septentrionalis subumbellata. Sprays of small white fls; 5"; HB **ANDR-20S** 25¢
yunnanensis. **ANDR-23** 30¢
Androsace Blend. All kinds mixed **ANDR-X** 20¢

ANEMONE (ah-NEM-oh-nee)

Attractive perennials blooming in the spring, summer or autumn; fls come white, rose, red and purplish. They thrive in a rich sandy loam, many in shade; they make beautiful plants in the border and some in the RG. The florist species are A. coronaria, fulgens and hortensis. These come in single and double fls and are grown mostly as fall or winter flowers, and grown much as are freesias; these are not real hardy.

CORONARIA: Poppy-flowered Anemone. This is the popular florist Anemone.

Cain. Single giant flowered strain, French **ANEM-10C** 20¢
Creagh Castle Strain. Famous English strain **ANEM-10CC** 25¢
Monarch. A new strain in best colors **ANEM-10M** 20¢
Single Giants. Large flowered strain in many colors **ANEM-10N** 20¢
Hollandia. Very pretty red with dark centers **ANEM-10H** 20¢
St. Brigid. True Irish strain, double brilliant fls, not hardy N of D.C. **ANEM-10S** 25¢
Mr. Fokker. Beautiful single bright blue **ANEM-10SF** 30¢
His Excellency. Pretty scarlet flowers **ANEM-10SE** 25¢
The Governor. Double bright scarlet flowers **ANEM-10SG** 25¢
Mixed. All the A. coronaria varieties blended **ANEM-10X** 15¢

alpina. Cream inside, purplish out; 3" across; 1½ ft; HP **ANEM-3** 25¢
sulphurea. A yellow variety **ANEM-3S** 35¢
biflora. **ANEM-8** 20¢
barbulata. **ANEM-7** 30¢
cylindrica. Candle A. Greenish white clusters; 2 ft, HP **ANEM-11** 25¢
demissa. White fls purplish outside, in clusters; Aug-Sept; 1 ft; HP **ANEM-16** 15¢
Drummondii. Fls cream, blue outside; June-July; moist soil; RG, 6", HP **ANEM-17** 25¢
globosa. Fls red to bronze-green; May-Sept; 18"; HP **ANEM-19** 20¢
Halleri. For sunny places, lilac fls; June; RG; 6", HP **ANEM-20** 25¢
Hybrida japonica. Autumn flowering hyb's white tinged rose, 3 ft; HHP **ANEM-21** 20¢
magellanica. **ANEM-32** 20¢
Giant Form. **ANEM-32C** 20¢
Lesseri. **ANEM-28** 4¢
Lesseri. Dwarf form; ferny lvs; deep pink fls; Aug-Sept; HP; sun **ANEM-28(W)** 30¢
montana. Dark violet, drooping fls; 6"; HP **ANEM-34** 20¢
multifida. **ANEM-35** 35¢

myosotidiflora: see Brunnera macrophylla.

narcissiflora. White fl in clusters; 1 in. ac; 1½ ft; HP **ANEM-36(C)** 30¢
nicricans. Purple-black fls; Pulsatilla Group; 1 ft; HP **ANEM-38** 20¢
occidentalis. White or purplish fls, 2" across; May; 1½ ft; HP **ANEM-39** 20¢
patens nuttalliana. Purple fls very early in spring; 8"; HP **ANEM-44N** 20¢
pratensis. Dark purple; 1 ft; Pulsatilla Group; HP **ANEM-45** 20¢
Pulsatilla. Violet fls; April; likes lime, fine spring fls; 1 ft, HP **ANEM-46** 15¢
ameena. **ANEM-46E** 20¢
rubra. Red fls 2½ in. ac **ANEM-46R(C)** 30¢
alba. A beautiful creamy white form; 8" HP **ANEM-46A** 15¢
australis. **ANEM-46T** 20¢
Violet-Blue. Splendid color strain **ANEM-46V** 20¢
Gayeri. **ANEM-46G** 20¢
Mallenderi. **ANEM-46L** 20¢
montana. Dark violet drooping flowers **ANEM-46M** 25¢
patens. Flowers purplish, 2½" across **ANEM-46P** 25¢
seerottina. **ANEM-46S** 20¢
slavica. Collected in Austria **ANEM-54** 20¢
ranunculoides. Yellow Wood A.; Golden yellow; Siberia; 8in; HP **ANEM-49(C)** 30¢
rivularis. White tinged blue; 1½" across; 3 ft; India **ANEM-51** 25¢
syvestris. Pure white, fragrant, nodding fls; May-June; 1½ ft, HP **ANEM-56** 20¢
virginiana. White or greenish fls, fine for meadows; June-Aug; 3 ft HP **ANEM-60** 20¢
vitifolia. Grape-leaf A., fls white, 2" ac. in cymes, July; HP **ANEM-61** 30¢

ANTENNARIA (an-te-NAY-ri-ah)

Everlasting; Pussy's Toes. Perennials used in the wild or rock garden, also much used as dried flowers in winter bouquets. Best in dry soil, easily grown. Flowers in heads and the leaves are white-woolly clustered at the base.

aprica. Dense low mats, white or pink heads, 5"; HP **ANTA-2** 25¢
dioica. Pale rose fls 1ft; HP **ANTA-8(C)** 30¢
rosea. Foliage distinctly white and woolly; fls rose; 1½ ft; HP **ANTA-17** 25¢

BALM (Melissa officinalis)

Only a few plants, two to five, will supply an ordinary family. It is used with other herbs in various ways or can be used along with Borage in summer drinks. The dried leaves are used in stuffings as well as in pot-pourri. A crushed leaf emits the sweet-est odor of all herbs.

It is very easily grown; sow seeds early in the spring, spacing plants in the permanent place to about 12 inches apart.

They require full sunshine. Cut off the old shoots in the fall and tidy up the bed occasionally. It is a perennial.

THYMUS HERBA-BARONA

This is a dark looking creeping plant whose foliage smells strongly of caraway seeds.

It can be used in seasoning beef, but is more of a novelty. We do not have seed of this but would like to hear from any reader who happens to be growing it.

PLANTING LILY SEED

When planting Lily seed, it is best not to sow too thickly because of the roots tending to mat together. When they are transplanted, much damage is done in separating them.

THE HAWAIIAN JADE TREE

Hawaiian Jade Tree or Naupaka (Scaevola frutescens var. sericea), a beautiful three foot shrub, both flowers and fruit white, not edible. It will grow anywhere but is especially good for beach planting, in sand. For the far South.

By Otto Degener, Hawaii.

GOING TO FLORIDA THIS WINTER?

Sure! But don't sit down and lose interest in life. Plant some seed of the many beautiful flowering trees and shrubs, that can only be grown in Florida (or southern California).

One never will have time to think of getting old when he has a lot of seedlings coming on; he must see them come into flower! Plan on starting some this year and better get the seeds early so as not to lose any time.

CAESALPINA MEXICANA

An evergreen Mexican small trees without thorns, bearing quantities of bright yellow flowers in upright spikes two or three times a year.

By E. A. Menninger

SEA GRAPES or COCCOLOBIS UVIFERA

A pretty shrub or small tree that will grow on sand and near the ocean. It is a shrub or small tree to 15 feet high. Its berries are edible and make excellent jelly

By Otto Degener.

Farinaceus: (fa-rin-NAY-see-us), starchy or floury.

Ferox: (FEE-rox), very thorny.

Iridifolius: (eye-rid-if-F O H-lee-us), Iris-leaved.

Hastilis: (hass-TYE-liss), referring to a spear.

Hians: (HYE-anz), open, gaping.

Horridus: (HORR-id-us), horrid (with spines)

Gaillardias should be moved only in the Spring.

The Thrifts (Armeria) are excellent for edgings but should be lifted and divided every two years.

All species and varieties of Dianthus are lime lovers and neglect may cause the loss of your favorites.

GET EVERY ISSUE — \$2.00 PER YEAR

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Too Many Seedling Lilies

Mr L. Tuffery of New Zealand cautions about the multitude of seedling Lilies being produced at the present time. We have also cautioned our readers along this line in past issues. Mr. Tuffery brings up the point that all seedlings should come true from seed before being recognized as a definite variety because if it is necessary to propagate them otherwise, it will be impossible to keep down disease, and a few of these bulbs in ones garden will soon infect the whole place.

LABOR LOST!!

Reading of a grower "removing all the soil in a 4 x 10 foot space, a foot deep and filling it with leaf mould" has me wondering if this was mostly labor lost.

Leaf mould always gives a good reaction when applied to the soil but mainly to those soils that have been fertilized with chemical fertilizers plus long cultivation and exposure to the hot sun. This leaves the soil lacking in the necessary micro-organisms, so necessary to good health, both to us humans and our flowers. The addition of a real good leaf mould to any soil and especially to potting soils, I believe, has its best value in inoculating the soil just as is the case with legume inoculation.

GROWING LILIES FROM SEED

The Formosanum seed that I ordered from you, arrived so that I planted it early in 1950. This fall, 1951, they are blooming.

They are a very beautiful Lily, most of the stalks are about 5 feet high but one is better than 6 feet. The Creelman Hybrid seed that I ordered this spring arrived early in June; I have just transplanted them into another flat and will give them considerable protection this winter. The tiny bulbs are about the size of a small match head.

By Paul Kepner, Nutwood, Ohio

WANTS CAPSICUMS

Mrs. James E. Winfield of Painted Post, N: Y., writes as follows:

Received a sample copy of your Garden Magazine; I am delighted with it and enclose \$2:00 for a years subscription.

I do not know who asked you to do this for me, but I thank them:

I would like to have you try and locate, thru your magazine rare Capsicums, native of Mexico and Central America. I am a collector of these and am searching especially for the Black Mexican and Black Nubian Capsicum.

She asks for sample copies be sent to two of her friends, but Mrs. C. H. Morgan of Alameda, Calif., is already a subscriber. The request for Argentine will be gladly attended to.

Mrs. Winfield mentions her Garden Club, The Homestead Garden Club, of Painted Post, yes, we would be pleased to send sample copies to each member:

LILIES NOT COMING UP!!

Each year along about June we hear about Lily bulbs not coming up. Out side of the fact that some may have been lost thru improper planting and by damage from various animales (We know of one case where the neighbor's dog dug up, and carried away, an entire years planting) the reason some do not show above ground, is natural; these appear the following year.

This is also one reason why you should never dig or hoe around your Lilies. Always hand weed and keep a good mulch on the surface.

October Garden Record

These two columns have been reserved for your own garden record for the month. Make notes on what should be done next year at this time; new plants added this month and many other reminders that will be of value in your gardening operations. The SAIER'S GARDEN MAGAZINE is designed to be useful next year as well as this and copies will be valuable for future references. Indexes will be provided in later issues so that a quick reference can be made to items of interest, especially descriptions and culture.

RARE SHRUB AND TREE OFFER

Continued from Front Cover Page

—**racemiflora microcarpa.** Ea. \$1.00; 3-\$2.50
An 8 foot species with pretty arching branches, flowering in May, in white clusters; berries are red. (1½-2 feet).

—**salicifolia.** Each \$1.25; 3 for \$3.00
An invaluable evergreen, tall and graceful, carrying a heavy crop of red berries. Zone VI. (2-2½ feet).

CYATHODES

All oranemntei shrubs from Australia. They are only suitable for Zone VII, the far South.

—**Colensoi.** Each \$1.50; 3 for \$3.75
A Heath-like New Zealand shrub of decumbent habit, with hoary foliage. Fruits are white or red. Zone VII.

—**robusta.** Each \$1.50; 3 for \$3.75
A more erect growth and longer leaves. Zone VII.

DEUTZIA

A very ornamental group and the following four not commonly found in this country.

—**Chunii.** Each \$2.50; 2 for \$4.00
A beautiful July-blooming species with large pink tinted white flowers with reflexed petals, in 4 inch long panicles all along the branches. (1-1½ feet).

—**Monbrigii.** Each \$1.25; 3 for \$3.00
Pretty, small, glistening white flowers in great profusion. Zone VI. (1-1½ feet).

—**setchuensis corymbiflora.** Each \$1.25; 3 for \$3.00

Innumerable white, star-like flowers in corymbose clusters; it is one of the best late summer shrubs. Zone VI. (1½-2 ft)

—**Sieboldiana.** Each \$1.25; 3 for \$3.00
A low shrub, 6 feet, with fragrant white flowers with bright orange anthers, (1-1½)

ONE EACH of the above for \$5.00

DIOSPYROS

Persimmon and suitable only for the South.

—**Lotus.** Each \$1.25; 3 for \$2.75
Date Plum. Grows to 40 feet; the leaves exude a heavy odor; fruits yellow turning black.

ELSCHOLTZIA

—**Siauntonii.** Each \$1.25; 3 for \$3.00
A shrubby Labiata, 4-5 feet high, mint-scented and purplish pink flowers in panicles, blooming from August to October. From North China. (1½-2 feet).

EMBOTHRIUM

—**coccineum lanceolatum.** Each \$2.50
The hardiest form of the incomparable Chilean Fire-bush. A slender, graceful tree covered with brilliant scarlet flowers in May. Zone VI. (6-9 inches).

EUCALYPTUS

Gum Tree. Not hardy in the North.
—**parvifolia.** Each \$1.50; 3 for \$3.75
The hardiest species. A very handsome tree, not found in the U. S. to our knowledge. Zone VI. (2-2½ feet).

EUONYMUS

Spindle Tree. They are very ornamental shrubs or trees and hardy in the North with but a few exceptions.

—**Bungeanus.** Each \$1.50; 3 for \$3.00
Tall slender shrubs to 15 feet with attractive cream-colored, pink tinted fruits. (1-1½ feet).

—**grandiflorus.** Each \$2.00
A semi-evergreen shrub to 12 feet from the Himalayas. Capsules are yellow with scarlet seeds. Zone VI. (1-1½ feet).

EUPTELIA

Asian shrubs hardy up to Michigan.
—**Franchetii.** Each \$1.75; 3 for \$3.25
A large shrub or small tree of great interest. It is covered in the spring with clusters of red anthers. (2-2½ feet).

—**polyandra.** Each \$1.50; 3 for \$3.00
Similar but notable for the color of its young shoots and autumn leaves. (2-2½ ft)
ONE EACH of above two species \$3.00

MAGNOLIA HIGHDOWNENSIS

This splendid hybrid, of which the original plant is in Col. Stern's famous Sussex Garden (England), is an ideal garden shrub of rounded habit and as high as 10 feet. The large fragrant flowers are bowl-shaped, waxy in texture and pure white, with central ring of rosy red anthers; they are open during May and June. The beautiful Magnolia breeds true from seed and the stock offered here was raised from seed supplied by Col. Sterns. We have only a limited number of plants to offer and the opportunity to secure one of these lovely Magnolias is rare. (1-1½ feet).

EACH \$3.50; 2 for \$6.00

EXOCHORDA

The Pearl Bushes are among the most outstanding and beautiful of spring flowering shrubs. Very ornamental, Spirea-like and hardy in the North.

—**Giraldii Wilsonii.** Each \$1.25; 3 for \$3.00
Large snow-white flowers, 2 inches across, covering its arching branches. (1½-2 feet).

—**racemosa.** Each \$1.25; 3 for \$3.00
A magnificent, large flowered species, the flowers 2 inches across; grows to 10 feet. (1½-2 feet).

—**serratifolia.** Each \$2.00; 3 for \$4.00
The prettiest of all the Exochordas. It is from Manchuria and forms a well shaped bush about 8 feet high and in the spring its slender branches are wreathed from end to end with lovely, 1-1½ inch wide, glistening white flowers. (1½-2 feet).

ONE EACH of above 3 species for \$4.00

FATSHEDERA

—**Lizei.** Each \$1.50; 3 for \$3.00
A remarkable hybrid between the Irish Ivy, Hedera Helix, and the Japanese Araiia, Fatsia japonica. A very pretty foliage shrub. Zone VII. (1½-2 feet).

FUCHSIA

—**magellanica versicolor.** Each \$1.50
A rare form with gray-green leaves, variegated pink, crimson and cream; grows to 15 feet when trained on walls. Zone VII.

GAULTHERIA

These are all tender shrubs suitable for the far South. Moist sandy or peaty soils and part shade. The three species are rare in this country.

—**Forrestii.** Each \$2.00; 3 for \$5.00
Remarkable for its lovely dark porcelain-blue berries; shrub 2-3 feet high. Zone VII. (6-9 inches).

—**Hookeri.** Each \$2.00; 3 for \$5.00
A low spreading shrub with attractive foliage; berries dark blue. Zone VII.

—**Mipueliana.** Each \$2.00; 3 for \$5.00
A creeping shrub with bright green leaves and large white fruits. Zone VII. (4-6 inches).

ONE EACH of above 3 species for \$5.00

HYPERICUM

St John's Wort. They are all very ornamental, most are hardy up to Michigan. The three species offered here are all rare and magnificent plants and to our knowledge, not grown or offered in this country. We only have a limited number to offer this year.

—**konytchense.** Each \$2.00; 3 for \$5.00
A rare Chinese shrub to 4 feet with beautiful 2 inch flowers of golden yellow freely borne from June to October. (9-12")

—**penduliflorum.** Each \$2.00; 3 for \$5.00
Large flowers with conspicuous stamens, a graceful shrub of 6 feet and a continuous bloomer. (1½-2 feet).

—**Rowallane Hybrid.** Each \$2.50; 3 for \$6.00
A magnificent plant. The flowers are bowl-shape, a rich golden yellow, 3 inches across. Zone VII. (1½-2 feet).

ILLICIAM

—**anisatum.** Each \$2.00; 3 for \$5.00
Aromatic evergreen, large shrub related to the Magnolia. Has pale yellow flowers. Zone VI. (1½-2 feet).

—**floridanum.** Each \$2.00
A shrub to 10 feet with brownish maroon flowers, 2 inches across. Zone VII. (1-1½)

KOELREUTHERIA

Pride of India.
—**formosana.** Each \$2.00
A tree new to cultivation from Formosa and suitable only for Zone VII. (1½-2 ft).

LONICERA

—**Maackii podocarpa.** Each \$1.00; 3-\$2.75
A graceful shrub to 10 feet with arching branches that are laden with yellowish white flowers and bright red berries. (1½-2 feet).

OSMANTHUS

Siphonosmanthus.
—**Delavayi.** Each \$2.00; 3 for \$5.00
One of China's gems; a very graceful small leaved species, shrubby and bearing masses of fragrant white flowers in the spring. Zone VII. (6-3 inches).

OSMAREA

Hybrid between Osmanthus and Phillyrea.
—**Burkwoodii.** Each \$2.00
Evergreen shrub with dark green and shining leaves and fragrant ivory-white flowers in April. Zone VI. (9-12 inches).

OSTEOMELES

—**Schwerinae microphylla.** Each \$2.00
A nice 6 foot shrub with elegant branches clad with leaves like tiny fern-fronds; pretty Hawthorne-like flowers and berries. Zone VI. (6-9 inches).

PAEONIA

—**lutea Sherriff's Variety.** Each \$3.00
Buttercup-yellow tree Paeony with very handsome foliage. A superb variety greatly superior to the type. (6-9 inches).

Continued on Back Cover

PIONEER SEED COMPANY - DIMONDALE, MICH.

SOME RARE IMPORTED SHRUBS

Continued from Inside Back Cover

HALIMIOCISTUS

Wintonensis. EACH \$2.00

A lovely bigeneric hybrid raised in England. The flowers are 2 inches across, pearly white, beautifully centered with yellow and crimson-maroon. Zone VII.

PEROVSKIA

—hybrida. EACH \$1.75; 3 for \$4.00
An ideal hybrid for late summer. Deeply cut gray-green foliage and with very long spikes of lavender-blue flowers. Zone VI. (1-1½ feet).

PHILESIA

—magellanica. EACH \$1.75
A dwarf shrubby Lapageria with rosy red, 2 inch nodding flowers. They require peaty soil, partial shade and are sometimes grown under glass.

PHLOMIS

—fruticosa. EACH \$1.00; 3 for \$2.50
Jerusalem Sage. Large bright yellow flowers throughout the summer. Zone VII. (9-12 inches).

PIMELEA

—prostrata. EACH \$1.75
Intricately branched shrublet with white Daphne-like flowers. Rare. Zone VII.

PTEROSTYRAX

Epaulctte Tree.
—hispidia. EACH \$2.00
Tall Japanese shrub related to Halesia. Elegant panicles of fragrant, white flowers in the summer; hardy in the North. (1-1½ feet).

SOPHORA

—japonica. EACH \$2.00; 2 for \$3.00
The Japanese Pogoda Tree. Hardy in the North; not often offered. (1-1½ feet).
—prostrata. EACH \$2.00
A New Zealand shrub with tortuous, interlacing branches and golden yellow flowers. Zone VII. (2-2½ feet).

SORBUS

—rufo-ferruginea. EACH \$1.50
A rare Japanese Mountain Ash with attractive red fruits. (1-1½ feet).
—Vilmorinii. EACH \$2.00
A rare, graceful, small round-headed tree with dark green, fern-like foliage. Fruits are white. Both species are not grown in this country to our knowledge. (1-1½ feet).

STEWARTIA

—koreana. EACH \$2.75
This superb species is very free flowering and gives brilliant autumn colors. (1-1½ feet).

STYRAX

—Wilsonii. EACH \$1.75; 3 for \$4.00
A charming introduction from China. Forms a dense, small shrub to 8 feet, flowering profusely. Zone VII. (9-12 in.)

Where no mention is made as to hardiness, it can be assumed that the plant can be grown in Michigan at least. Zone VII, is in the far South and Southern California and should be considered as near frost proof.

These zones will be shown on a map in a later issue.

May we call your attention again to the necessity of early orders on these special offers. The plants listed are all hard to find items, and the stocks in every case are limited and to add to this, is the difficulties of importation, therefore orders should reach us by the end of the year at the very latest and even then, available stocks may be sold on many kinds.

SYRINGEA

Lilacs.
—microphylla superba. EACH \$3.00
A very pretty and rare shrub, with bright pink flowers in lateral panicles. (1½-2 feet).

VACCINEUM

—Arctostaphylos. EACH \$1.50; 3 for \$4.00
An attractively fall-colored large bush, to 10 feet high, and not grown in this country to our knowledge. (9-12 inches).
—cylindraceum. EACH \$1.50; 3 for \$4.00
A very rare shrub, characterized by its cylindrical, blue-black berries. (6-9 in.)
—padifolium. EACH \$1.50; 3 for \$4.00
A large shrub with waxy, yellow flowers, tinged purple, and followed by dark blue berries; rare in this country. Zone VII. (9-12 inches).

VERONICA

—albicans. EACH \$1.50; 3 for \$3.00
(Hibe albicans). A dense, rounded, glaucous shrub, 2 feet high, with white flowers in many flowered racemes. Zone VII. (9-12 inches).
—Aaira. EACH \$1.50; 3 for \$3.00
A small rare shrub from New Zealand; it has narrow glaucous leaves and white flowers. Zone VII. (9-12 inches).

VIBURNUM

—betulifolium. EACH \$1.75; 3 for \$4.00
A tall growing shrub, the long branches of which are bent over with the weight of bunches of bright red berries. (1-1½ ft).
—Davidii. EACH \$1.75; 3 for \$4.00
A 3 foot evergreen shrub with rounded head and producing wonderful bright turquoise-blue berries. Zone VII. (6-9 in.)
—hupehense. EACH \$1.50; 3 for \$3.00
A medium sized Chinese shrub growing to 5 feet, bearing bright red berries. (1-1½ ft)
—Sargentii. EACH \$1.00; 3 for \$2.00
An Asiatic species resembling V. Opulus. (1-1½ feet).
—setigerum. EACH \$1.50; 3-\$3.00; 10-\$9.00

Where a bold effect is desired, this Chinese shrub will provide it. Forming an erect-branched specimen to 12 feet high, it cannot fail to be strikingly colorful when laden with its glowing red, egg-shaped berries, each nearly ½ inch long. The leaves are used by the monks of Mount Omei as a kind of tea. This should also be an ideal species to grow in large groups for bird shelter and food. Those wishing them in quantity, should write for special prices, while our stock lasts.

WEIGELIA

—florida folius purpureis. EACH \$2.00
A rare and attractive 8 foot shrub with purple foliage and pink flowers. (1½-2 ft)

ZANTHOXYLUM

—simulans. EACH \$1.50; 3 for \$3.00
Aromatic shrub or small tree, to 20 feet, having glossy leaves and red fruits. This Chinese relative of the "Prickly Ash" or "Toothache Tree", is very handsome and conspicuous on account of its shining leaves. (1-1½ feet).

PIERIS

—Forrestii. EACH \$3.00
An astoundingly striking shrub, the young growth being glowing scarlet and appearing at the same time as the masses of waxy white flowers. A rare ornamental shrub. (9-15 inches).

ENGLISH CLEMATIS VINES

After the Rose, the Clematis stands unrivalled for effectiveness and adaptability for most purposes of garden decoration. This remark applies particularly to the large-flowered hybrids listed below, which, being less easily established than the species, require and fully deserve more care in the selection of the site and preparation of the soil where it is proposed to plant them. They should be so placed that their roots are shaded from the direct rays of the sun, and be given good loamy soil with which well rotted manure and lime in some form have been mixed. Good drainage is essential.

The varieties of the Florida and Patens sections flower on the previous year's shoots, and should therefore be pruned immediately after flowering. The Lanuginosa section may also be treated in this way, or alternatively be pruned hard in spring, as is best for the other sections, to defer flowering until summer and autumn. Hard pruning means cutting back young shoots to within six inches of older wood.

The letters in brackets following the names indicate the sections to which the varieties belong viz.: F—Florida, J—Jackmanii, L—Lanuginosa, P—Patens, T—Texensis, (coccinea), V—Viticella.

PRICE: Each, \$1.50; 3 for \$4.00; 10- \$12.00.

ASCOTIENSIS (V). Azure blue.
BEAUTY OF WORCESTER (L). Bluish violet, with conspicuous white stamens. Occasionally produces double flowers.
BELLE OF WOKING (F). Pale mauve, double flowers.
COMTESSE de BOUCHARD (J). A beautiful soft rose-pink variety.
CRIMSON KING (L). Bright rose-red.
DANIEL DERONDA (L). Deep violet-blue.
DUCHESS of ALBANY (T). Bright rich pink, shading to lilac-pink at the edges.
DUCHESS of EDINBURGH (F). Large double white.
DUCHESS of SUTHERLAND (V). Petunia with darker berries.
ERNEST MARKHAM (V). Petunia red with a velvety sheen.
Clematis List Continued on Page 164

PIONEER SEED COMPANY - DIMONDALE, MICH.

Saunders' GARDEN MAGAZINE

A MANUAL OF RARE FLOWERS, THEIR SELECTION AND CULTURE

Vol. 2, No. 17

DECEMBER, 1951

25 Cents



Notable English Gardens — Garden of Mary Anderson at Broadway. (Page 163)

40 YEARS
EXPERIENCE

The George Russell Edition
Originator of Famed Russell Lupin

SPECIAL OFFER IN RARE SHRUBS

AZALEA

—EDDY. Each: \$3.00; 2 for \$5.00

A dwarf evergreen variety that is outstanding, even in vast collections. The flowers are of an intense Indian-red shade and have prettily undulated lobes; this is a scarce variety and few if any are grown in this country. (8-12 inches)

—EXBURY HYBRIDS. Each, \$2.00; 5-\$9.00

These are the finest hardy Azaleas in the world; they are from the world famous gardens at Exbury, England of the late Lionel de Rothschild; they are far superior to any other strain. Their magnificent flower trusses are in glorious shades of cream, yellow, orange, apricot, flame, pink, rose, crimson and scarlet. The plants are of robust habit, reaching a height of 5-7 feet. This is a rare opportunity to import some or these beautiful Azaleas. (9-12 in.)

BROUSSONETIA

—papyrifera. Each \$1.75; 2 for \$3.00

Paper Mulberry. Showy orange red fruits, hardy in the Central States, and with protection, in the North. Seldom offered for sale. Zone VII. (2-2½ feet).

CAESALPINA

—JAPONICA. Each \$1.90; 2 for \$3.00

A magnificent shrub of uncommon appearance; leaves Mimosa-like and the flowers a beautiful bright yellow. Zone VII.

CELTIS

—TONRNEFORTII. Each \$1.00; 3-\$2.50

A small tree growing to 20 feet with polished leaves and reddish yellow berries. (2-2½).

CERATOSTIGMA

—WILLMOTTIANUM. Each \$1.50; 3-\$2.75

A rich blue shrubby Plumbago, growing to 5 feet; flowers from July to November. Zone VII.

CERCIS

—RACEMOSA. Each \$2.00; 2 for \$3.25

This was considered by the late Dr. E. H. Wilson to be one of the very best and most beautiful flowering trees he introduced from China. This very distinct Redbud grows to 20-30 feet high and its rose colored flowers are carried in racemes of as many as 30-40; followed by pods 4" long. (1-1½ feet).

CISTIS

Very desirable rock garden plants; well drained limestone soils in sunny locations. They will not stand much frost.

—Aquilari maculata. Each \$1.00; 5-\$4.00

Huge white flowers with central ring of crimson blotches. Zone VII.

—corbariensis. Each \$1.00; 5 for \$4.00

Pure white, buds crimson; zone VI.

—populifolius lasiocalyx. Each \$1.00; 5-\$4.00

Large leaves and white flowers with waxy petals; zone VII.

—pulverulentus. Each \$1.00; 5 for \$4.00

Vivid rose-pink flowers and gray foliage; zone VII.

—Silver Pink. Each \$1.00; 5 for \$4.00

A lovely hybrid raised in England, with large clear silvery pink flowers; zone VI.

—Cistus Collection. 5 for \$4.00; 10-\$7.75

One each of the above five kinds.

All items offered here are for Spring delivery, FOB Dimondale, Mich., (Express charges collect). Orders must be placed as soon as possible as most items listed here are imported.

In all cases the plants offered are in transplanting sizes and where we are sure this is given in (). Where no mention is made of hardiness, it may be assumed that the plant is hardy at least as far north as Michigan.

The Zone figures as given represent those hardy in the Southern States, as Zone VI, and Zone VII, represents the far South and Southern California.

A Zone map of North America will be published in the December issue.

COTONEASTER WARDII

Named in honor of Capt. Kingdon Ward, one of the greatest of all plant collectors, by whom it was introduced from Tibet. This highly ornamental shrub, which grows 6-8 feet high, is one of the very showiest evergreens, always conspicuous on account of the whiteness of the shoots and undersides of the leaves, which are glossy above and provide an admirable background for the masses of orange-red berries with which it is aglow during winter. Zone VI. (1½-2 feet).

Each \$2.50; 3 for \$3.75

CLADOTHAMNUS

—pyrolaeiflorus. Each \$1.25

A very interesting plant of uncommon appearance; flowers pink and yellow tinted; 1 inch across; grows to 6 feet; a very hardy deciduous shrub

CLERODENDRON

—trichotomum Fargesii. Each \$1.25; 2-\$2.25

A beautiful shrub, to 10 feet, hardy in the North; flowers white, fragrant, followed by wonderful blue berries with crimson calyces. (2-2½ feet).

CLETHRA

One each of 4 following \$7.50

—barbinervis. Each \$2.00

Has very long racemes of fragrant flowers; grows to 30 feet.

—Delavayi. Each \$2.00

A magnificent shrub for the South; racemes many flowered; Zone VII.

May we call your attention again to the necessity of ordering early on the special offers made here. They represent RARE and HARD-TO-FIND shrubs and trees, and the available stocks are very limited. Most are also imported items and this will require orders to be in before the first of the year; even then, available stocks may be sold. ORDER THESE RARE PLANTS NOW!

—Fargesii. Each \$2.00

Chinese species with long racemes of white fragrant flowers; grows to 12 feet.

—monostachya. Each \$3.00

A lovely new species of the most beautiful of late flowering shrubs; Zone VII. (9-12 inches).

CORNUS

Dogwood.

—macrophylla. Each \$1.50; 3 for \$3.25

A handsome Chinese species, large leaved and creamy flowers in large panicle-like cymes, 6 inches across, followed by bluish black berries; Zone VI.

COTONEASTER

They are showy shrubs and highly ornamental on account of their pretty leaves and showy berries. Unfortunately some are not hardy in the far North.

—acutifolia villosula. Each \$1.50; 3-\$3.00

Brilliantly colored in the fall; leaves glossy, berries black; pinkish flowers in clusters; to 12 feet. (1½-2 feet).

—amoena. Each \$1.50; 3 for \$3.00

This is a very pretty Chinese evergreen shrub to 5 feet; flowers pinkish, in clusters followed by orange-red fruits. (1-1½ ft)

—bullata. Each \$1.50; 3 for \$3.00

Another pretty Chinese species with pinkish flowers in clusters; berries bright red and cherry-like; leaves large and corrugated. 1½-2 feet).

—floribunda. Each \$1.50; 3-\$3.00

Leaves and berry clusters of this form are larger.

—Cooperi. Each \$1.50; 3 for \$3.00

A rare tall shrub bearing brilliant red fruits in the fall; Zone VI. (1½-2 feet)

—conspicua. Each \$1.75; 3 for \$3.25

A graceful small leaved shrub with spreading, arching branches; it is very conspicuous, when in flower and berry. (1-1½ feet).

—Dielsiana. Each \$1.50; 3 for \$3.00

An elegant 8 foot Chinese shrub with long arching branches, crowded with scarlet berries and brilliantly colored leaves in the fall.

—Harroviana. Each \$1.75; 3 for \$3.50

A graceful Chinese, 6 foot, evergreen shrub; flowers white in dense clusters, 1½ inches across; berries red; Zone VI. (1½-2)

—hebeophylla. Each \$1.50; 3 for \$3.50

Long arching branches carrying rounded leathery leaves and dark red berries; flowers are white and in corymbs. Zone VI. (1-1½ feet)

—Heneryiana. Each \$1.00; 3 for \$2.50

A semi-evergreen shrub from China, to 12 feet, with long dark green, glossy green leaves and white flowers in large clusters, followed by dark red berries. An exceptional variety for zone VI. (1-1½ feet).

—lactea. Each \$1.25; 3 for \$3.00

A large, highly ornamental semi-evergreen shrub to 10 feet, from China, with handsome oval leathery leaves, grayish beneath; flowers are white in corymbs, two inches across, followed by large clusters of red berries, carried into winter. Zone VI. (1-1½ feet).

—monpinensis. Each \$1.00; 3 for \$2.75

A large 15 foot shrub similar to C. Bullata but with black fruits; needs protection in the North. (1½-2 feet).

—obscura. Each \$1.00; 3 for \$2.75

The leaves on this 15 foot shrub are yellowish gray beneath; flowers are pinkish and in short clusters, berries dark red. (1½-2 feet).

Continued on Inside of Back Cover

PIONEER SEED COMPANY - DIMONDALE, MICH.

An Adventure in Growing Crinums

Perhaps I should label this, "Adventures with Crinums." The word "adventure" well describes the activities of a plant lover in pursuit of his favorite occupation. The word Crinum comes from the Greek word *krinon*, meaning lily, but from the time of Carl Linnaeus, it has been known that they are Amaryliads, and not Lilies. Due to the lily-like form and appearance, to many they are still Crinum Lilies.

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Later, when we had moved to California in 1905, I saw some large bulbous plants in many yards. For some time I wondered what they were. I finally decided they were Crinums. I had already gotten a few;

By Cecil Houdyshel

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First Hybrid to Seed

This hybrid is the first that bears seed freely and this fact raised my hopes. Here I had a cross between two hybrids, probably the first ever made, and it produced abundant crops of seed every year.

Pollen from Ellen Bousanquet, and from

every hybrid available, was used. The flowers were first emasculated before their pollen ripened; always seeds were set and ripened. These were planted and grown to flowering size; their seed cross-pollinated and raised. At least four generations of seedlings descended from C. Virginia Lee but her great-great-grand children are still Virginia Lees with variations in color which in no way resemble the color of their pollen parent. A white one was named Gordon Wayne. It

C. Gordon Wayne Crinum

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My hope was for a race of Crinum hybrids that bore seed freely and crossed easily. In that way, the breeding of Crinums would soon result in great improvements. This was a great disappointment; for many years. I quit breeding them.

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If the soil be sandy, it will also help I have lost a number of fine plants because of alkaline soil. Among these, most of our C. Edmund Sturtevant, and again by a freeze when some of those remaining were killed along with most of our White Queen in storage trays out doors.

I had long known that Crinum seed should be planted on top of the ground. Seed of Clivias, Nerines, Brunsvigias, Haemanthus and others of a turgid nature also do better planted thus. These seed possess photosynthesis, similar to that of foliage and need light. This was discovered by a student at Brigham Young University.

From my point of view, every amateur gardener should experiment in breeding plants. One English clock maker made his

Continued on Page 152

SEED CATALOG

We send you this copy of SAIER'S GARDEN MAGAZINE, in which we are listing all of our seeds; if you should wish the magazine every month, the present subscription price is \$2.00 per year.

PIONEER SEED COMPANY

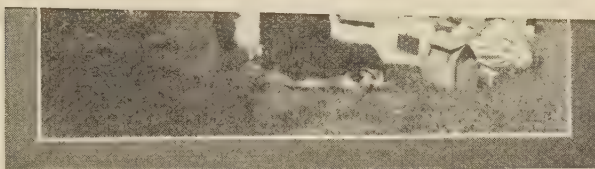
Dimondale, Michigan

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Probably in the 20's I raised a hybrid which was named Virginia Lee when intro-



The Purple Fringe Bush

George Russell

Passes Away

We are very sorry to hear in today's mail of the death of George Russell. Mr. Russell will be known for his improvement of the Lupin and it was our intention to have his picture and something on his work for our December issue.

Mr. Russell was a plain gardener, very reserved, and very devoted to his work.

Many, many thousands of flower growers have planted and grown the Russell strain of the perennial Lupin, but I am afraid only a very few ever knew of the originator of the beautiful Russell Lupin. It was our special wish to give space to this wonderful man, and when he was alive. We have pictures now in the mail, which we shall publish

Continued on Page 156

SPECIAL OFFER IN RARE SHRUBS

AZALEA

—EDDY. Each: \$3.00; 2 for \$5.00

A dwarf evergreen variety that is outstanding, even in vast collections. The flowers are of an intense Indian-red shade and have prettily undulated lobes; this is a scarce variety and few if any are grown in this country. (8-12 inches)

—EXBURY HYBRIDS. Each, \$2.00; 5-\$9.00

These are the finest hardy Azaleas in the world; they are from the world famous gardens at Exbury, England of the late Lionel de Rothschild; they are far superior to any other strain. Their magnificent flower trusses are in glorious shades of cream, yellow, orange, apricot, flame, pink, rose, crimson and scarlet. The plants are of robust habit, reaching a height of 5-7 feet. This is a rare opportunity to import some of these beautiful Azaleas. (9-12 in.)

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CISTIS

Very desirable rock garden plants; well drained limestone soils in sunny locations. They will not stand much frost.

—Aquilari maculata. Each \$1.00; 5-\$4.00

Huge white flowers with central ring of crimson blotches. Zone VII.

—corbariensis. Each \$1.00; 5 for \$4.00

Pure white, buds crimson; zone VI.

—populifolius lasiocalyx. Each \$1.00; 5-\$4.00

Large leaves and white flowers with waxy petals; zone VII.

—pulverulentus. Each \$1.00; 5 for \$4.00

Vivid rose-pink flowers and gray foliage; zone VII.

—Silver Pink. Each \$1.00; 5 for \$4.00

A lovely hybrid raised in England, with large clear silvery pink flowers; zone VI.

—Cistus Collection. 5 for \$4.00; 10-\$7.75

One each of the above five kinds.

All items offered here are for Spring delivery, FOB Dimondale, Mich., (Express charges collect). Orders must be placed as soon as possible as most items listed here are imported.

In all cases the plants offered are in transplanting sizes and where we are sure this is given in (). Where no mention is made of hardiness, it may be assumed that the plant is hardy at least as far north as Michigan.

The Zone figures as given represent those hardy in the Southern States, as Zone VI, and Zone VII, represents the far South and Southern California.

the North; flowers white, fragrant, followed by wonderful blue berries with crimson calyxes. (2-2½ feet).

CLETHRA

One each of 4 following \$7.50

—barbinervis. Each \$2.00

Has very long racemes of fragrant flowers; grows to 30 feet.

—Delavayi. Each \$2.00

A magnificent shrub for the South; racemes many flowered; Zone VII.

May we call your attention again to the necessity of ordering early on the special offers made here. They represent RARE and HARD-TO-FIND shrubs and trees, and the available stocks are very limited. Most are also imported items and this will require orders to be in before the first of the year; even then, available stocks may be sold. ORDER THESE RARE PLANTS NOW!

—Fargesii. Each \$2.00
Chinese species with long racemes of white fragrant flowers; grows to 12 feet.

—monostachya. Each \$3.00

A lovely new species of the most beautiful of late flowering shrubs; Zone VII. (9-12 inches).

CORNUS

Dogwood.

—macrophylla. Each \$1.50; 3 for \$3.25

A handsome Chinese species, large leaved and creamy flowers in large panicle-like cymes, 6 inches across, followed by bluish black berries; Zone VI.

COTONEASTER

They are showy shrubs and highly ornamental on account of their pretty leaves and showy berries. Unfortunately some are not hardy in the far North.

—acutifolia villosula. Each \$1.50; 3-\$3.00

leathery leaves and white flowers are white and in corymbs. Zone VI. (1-1½ feet)

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Continued on Inside of Back Cover

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Later, when we had moved to California in 1905, I saw some large bulbous plants in many yards. For some time I wondered what they were. I finally decided they were Crinums. I had already gotten a few; they were mostly what were then called C. capense, later C. longifolia, but now C. bulbisperrum. Others were C. Moorei.

In 1910 I imported two varieties of C. Powellii; a little later I tried to cross C. bulbisperrum with Amaryllis Johnsonii and found what I should already have known, that such a cross is impossible. In about 1912 I placed pollen of C. Moorei on the stigmas of C. bulbisperrum flowers. This was the reciprocal of the cross which produced C. Powellii, as in this, the seed parent was C. bulbisperrum, and C. Moorei was the seed parent used to produce the C. Powellii varieties. From this cross, about 600 seedlings were produced, one of which became C. Cecil Houdyshel. From its seed parent, it inherited the trait of blooming thruout the spring, summer and fall, a trait not possessed by the Powellii varieties.

Luther Burbank's Hybrids

In 1910-11, I was principal of Carson City High School and the following year, Supt. of Schools at Virginia City, Nevada. On trips back to my home in Pomona, I frequently visited Luther Burbank at Santa Rosa. He had a very, thick row of Crinums which he called Burbank Hybrids, but they appeared to be identical. I brought home several bulbs and after Mr. Burbank's death, this Crinum was introduced by a former employee as White Queen, a name it richly deserves.

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Last year, since C. Cecil Houdyshel bears a few seed, I pollinated a few flowers by C. Yemense, a large white; one seed only resulted. I am growing this in the greenhouse in order to get continual, year around growth. This year have crossed Cecil Houdyshel with a deep wine-red hybrid; whether results be the same as with the Virginia Lee seedlings, no one knows.

One thing to remember is that they are stream-side plants and have been distributed all over the world by streams and ocean currents. They like stream sides and enough moisture. They like the shade of trees and C. Moorei must have nearly tall shade. They like good drainage and an acid soil; in alkaline soils, some varieties become chlorotic and finally may die. This is probably not a mosaic disease as I first supposed but rather a food deficiency. Very likely some of the food salts they need do not ionize in an alkaline solution. The remedy is to plant the less tolerant kinds

in soil made acid by the addition of a large quantity of sphagnum moss, peat or oak leaf mould.

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Continued on Page 156

Cold Stratification of Tree and Shrub Seeds

In this issue and during the fall months, seeds of woody plants, (shrubs and trees) are in order. The handling of this class of seed usually is different than growing Petunias or Marigolds and many a purchase has been made of shrub and trees seed which we would not be surprised, never produced a seedling, all due to the lack of experience and knowledge on the part of the purchaser.

A few years ago we had many wholesale orders from a firm, for Ilex seed. To germinate this type of seed, requires much more than merely covering up the seed in a seed flat. We doubt if there were many seedlings grown from all this seed.

Now, it would be impossible for any seed firm to go to the expense of printing detailed instructions for each species. To give cultural direction on the common flowers such as Pansy, Calliopsis, etc., is a simple matter. To do so on Lilies still would not be so difficult but in the case of woody plants and all of the alpine flowers, orchids and many others, the instructions could run into books.

Germination Problems to be Discussed

All these problems will be discussed in our columns, in issue after issue, and the articles will be timed to meet the questions most likely to be raised, as different problems present themselves.

Many seeds, especially in shrubs and trees, have a dormant period, when it is impossible to get them to germinate. One must know how to overcome these problems if he expects to get germination satisfactory.

Different species, even, will require a different treatment and much of this variation is caused by the different climates where the species originally originated.

Usually, nature ripens the seed late in the season and as it is best that nothing should happen to cause the seed to germinate before spring, there has been an internal dormancy established, thus delaying germination till the spring, when they come to life.

The easiest method to overcome this dormancy is by what is called cold stratification, which simply copies nature's way, by keeping the seed moist and at winter temperature for a short period, and then when brot to warmth germination starts without delay.

Dormancy in Tree and Shrub Seeds

Tree and shrub seeds are generally collected from wild or forest plants, that is they are not grown on seed farms and usually the seed is not ready to harvest till late summer or autumn. By the time they are cleaned and dried, it is winter and thus delivery to the actual grower run into the winter months. Therefore if the seed is stored in a dry place till spring and then sown the germination will in many cases be as low as 10%. But if the seed is left undisturbed it will give a good germination the following year. It is because of this year delay that a cold stratification treatment is recommended and practiced by regular growers.

Cold stratification is merely the storing of the seed in some moist medium and then stored at a temperature of a little over 32 degrees Far. for from 30 to 120 days, according to the particular seed.

The various mediums used are sand, milled sphagnum moss and a granular peat. The sand is the most commonly used and must be clean sand; if it has any dirt, it should be washed. The amount used varies from 1-3 times the volume of the seed and should be sufficient to surround all the seed and to

Continued on Page 147

RARE SHRUBS AND TREES

...We list below a part of our spring offering in RARE and HARD-TO-FIND TREES and SHRUBS, each one a gem in any ornamental planting. In following issues these will be continued....The prices cannot be definitely marked at this time as the bulk of the offerings are imported and much will depend upon import restrictions which will have to be worked out during the winter. However, we believe these plants can be sold so that the price will range between \$1.00 and \$2.00; in all cases the shipments are FOB here, the express or postage will be extra, but there is no charge for packing.

HOW TO ORDER: We would like to know as soon as possible just what our customers are interested in and therefore we will accept reservations now and will notify you later as to the actual import restrictions and the price, at which time you may definitely order or cancel any or all of your reservation. It will be necessary, however, to place your order before the first of the year. Because time will be required to assemble the great number of different stocks, pack and get them shipped in time to be here and thru the inspection and still have them in the hands of our customer early in the spring. **SIZE:** It will be necessary to import in the smaller sizes mainly on account of costs in large sizes, but more so in that most of the rarer types of shrubs and trees can only be had in the small sizes....We will try to give all this information in later lists.... May we also call your attention to the limited amount of these plants that will be available. It actually is limited and it is very important to reserve what you would like to have. **DO THIS NOW, PLEASE.** It will not be necessary to remit.

ABELIOPHYLLUM. A slow growing shrub from Korea and related to the Forsythia. —*distichum*. Flowers white, tinged pink, fragrant, opening in February.

ABUTILON megapotamicum. (vexillarium). Conspicuous flowers having red calyx, yellow petals and brown anthers; suitable for a warm wall; tender.

—*variegatum*. Leaves white mottled, golden variegation.

—*Milleri*. Flowers bell-shaped, orange, with crimson stamens; leaves dark green, mottled yellow; continuous flowering.

—*vitifolium*. Very handsome, tall, Chilean shrub, needing a sunny sheltered site; flowers Mallow-like, pale to deep mauve.

ACANTHOPANAX. Shrubs or trees with handsome foliage, related to Aralia.

—*spinococcus*. An elegant shrub up to 10 ft high; fruits are black.

ACRADENIA. Tender small evergreen Tasmanian shrub, moderately hardy.

—*Frankliniae*. Leaves dark green, trifoliate, flowers white, borne in May in terminal flat clusters.

ALBIZZIA. Deciduous, mimosa-like shrubs or small trees valuable for their pretty foliage and attractive flowers.

—*Julibrissin*. The hardest species; flower heads pink, produced in summer; withstands severe frost.

—*uophantha*. A shrub or small trees with beautiful foliage and yellowish flowers in spring; only suitable for the far South.

AMELANCHIER. The "Snowy Mespilus" or "June Berry"; a beautiful genus of very hardy small trees or shrubs, thriving in any ordinary soil; the abundant racemes of white flowers are produced in spring before the leaves are fully developed; foliage often richly colored in the autumn.

—*alnifolia*. A shrubby species with densely pubescent leaves.

—*asiatica*. An elegant small tree flowering in May and intermittently over long period.

—*nanadensis*. A medium sized tree; the numerous white flowers are followed by maroon-purple fruits in June.

—*grandiflora*. A hybrid between *nanadensis* and *laevis*.

—*laevis*. Small tree distinguished by its purplish young foliage and drooping racemes.

—*oblongifolia*. Tall shrub with erect stems, or small tree, very free flowering and coloring well in the autumn.

—*spirata*. Bushy shrub to 12 ft. high; fruits bluish black.

—*stolonifera*. Spreading, shrubby species about 4 ft. high.

ARISTOTELIA. Following two species are native of New Zealand.

—*fruticosa*. An extraordinary variable shrub; leathery leaves, varying from linear to oblong-obovate.

—*racemosa*. A graceful small tree suitable for mild places.

ARTEMISIA. Aromatic shrubs with attractive foliage.

—*Abrotanum*. The "Southernwood" or "Lad's Love" of cottage gardens.

—*arborescens*. The billowy filigree of its silvery leaves make this a charming subject for the gray or blue border.

BUDLEIA. A genus including several species of the greatest garden value thriving in almost any soil and reveling in full sun. The flowering period is July to September unless otherwise stated.

—*alternifolia*. Graceful, small-leaved shrub with long arching branches wreathed in early summer with delicate lilac, fragrant flowers.

—*asiatica*. Dainty, cool greenhouse plant, bearing panicles of white, fragrant flowers during winter.

—*auriculata*. Produces small panicles of sweetly scented, white flowers in autumn; a good shrub for a sunny wall.

—*candida*. Distinguished by flannelly, whitish leaves and small racemes of violet fls.

—*caryopteridifolia*. This seems to be the hardest of a small group of spring flowering species; the fragrant, lilac-colored flowers are borne in the panicles on previous year's shoots; leaves and young growth clothed with white tomentum.

—*Colvillei*. June flowering, Himalayan species; the large rose colored flowers are produced on old wood; while tender as a young plant, mature specimens have withstood zero frosts.

—*kewensis*. A form with rich red flowers.

—*crispa*. Leaves and stems white-felted; flowers in ovoid, terminal panicles, lilac with orange throat.

—*Davidii*. This species gives the best results when given hard pruning each spring; the flowers are very attractive to butterflies; it does well too near the sea.

—*amplissima*. Huge panicles of deep mauve flowers.

—*Ile de France*. Flowers rich purple-blue.

—*Pink Pearl*. Dense panicles pale lilac with soft yellow reverse.

—*Prince Charming*. A fine new pink variety.

—*Fallowiana*. Foliage silvery, flowers very fragrant, pale lavender-blue; large panicles.

—*alba*. Choice shrub with white flowers and orange eye.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

RARE SHRUBS AND TREES

- Farreri**. Leaves white-felted, large and handsome; flowers fragrant, lilac; April.
- Forrestii**. Leaves covered with reddish-brown down, beneath; inflorescence cylindrical; flowers fragrant, varying from pale lilac to reddish maroon.
- globosa**. The Chilean "Orange Ball Tree"; a striking tall shrub when in May laden with orange-yellow, ball-like inflorescences.
- japonica**. A Japanese shrub of arching habit with drooping racemes of pale lilac.
- Lindleyana**. Long slender racemes of long curved purplish violet flowers.
- madafascariensis**. Yellow flowers in long panicles during winter; tender.
- myriantha**. Leaves lanceolate, covered beneath with white felt; flowers in long slender panicles; an elegant grey shrub.

BUPLEURUM fruticosum. One of the best shrubs for exposed places near the sea and limey soils; also for planting under trees; foliage bright green; flowers yellow; July.

CALOPHACA wolgarica. A prostrate shrub bearing yellow, pea-shaped flowers in June and July; needs full sun.

CALYCANTHUS fertilis. "Allspice"; flowers brown-crimson through summer.

CARYOPTERIS. Small verbenalike shrubs with grey aromatic leaves, best in full sun.

- clandonensis**. (*Mastacanthus x mongolica*) This vigorous hybrid thrives almost anywhere, producing its bright blue flowers in August and September.

- An ideal subject for mass effect and can be kept to a height of about 2½ ft.
- Mastacanthus*. An erect shrub up to 5 ft high; flowers violet-blue, opening in Sept.
- mongolica*. Distinct in its dwarf habit, narrow leaves and comparatively large rich
- mongolica*. Distinct in its dwarf habit, narrow leaves and large rich blue flowers.

CASSIA corymbosa. Very handsome wall shrub with pinnate leaves; flowers large rich yellow, in terminal clusters during late summer; needs very warm site; tender.

- marylandica**. A semi-woody plant; flowers in racemes, yellow with purple anthers.

CERATOSTIGMA. The "Plumbagos" are favorites on account of their blue flowers.

- Griffithii**. A beautiful Himalayan species, only suitable for mild districts; leaves color well in the autumn.

—**Willmottianum**. Forms a shrub of about 3 ft in height; the rich blue flowers appear in July and continue until autumn; suitable for either shrubby or herbaceous border.

CERCIDIPHYLLUM japonicum. Forms a small, round-headed tree, assuming rich autumnal colors in favorable seasons.

CHIONANTHUS refusa. "Chinese Fringe Tree"; a choice shrub, bearing pure white flowers in profusion in June and July.

CHORDOSPARTIUM Stevensonii. An exceedingly rare N. Zealand broom-like, leafless shrub, bearing racemes of lilac flowers; resembles in habit a small weeping willow.

CLETHRA. Shrubs requiring a lime-free soil, flowering in late summer and notable for their fragrance; all have white flowers in long racemes or panicles.

- arborea**. A magnificent tall shrub with Lily-of-the-Valley-like flowers; only suitable for the mildest sections.

COLLETIA. Interesting and curious shrubs with green, polymorphic, leaf-like stems; foliage scanty, sometimes absent; flowers small, ivory-white.

- armata**. Branches with long, stout spines.
- cruciata**. (*bictoniensis*) Branches rigid, with large, triangular, compressed spines.

CORIARIA. Shrubs characterised by the frond-like arrangement of their leaves and and showy fruits.

- terminalis**. Handsome sub-shrub from Sikkim and China; fruits black or translucent
- nepalensis**. A low spreading shrub with black-purple fruits; foliage tinted in fall.

CORNUS. The Dogwoods listed below are those that are not commonly found grown in this country.

- alternifolia argentea**. One of the very best of variegated shrubs; small plants.
- capitata**. Tender, evergreen species suitable for mild sections; beautiful small tree; flower heads surrounded by sulphur-yellow bracts, followed by large, strawberry fruits.
- dubia**. A rare hybrid between *C. paucinervis* and *Amomum*.
- Kousa**. Elegant tall shrub; the numerous flowers of which the white bracts are the conspicuous part, are poised on slender erect stalks on the horizontal branches.
- macrophylla**. Large leaved tree up to 30 ft. high; flowers creamy white in 4-6" heads.
- mas**. The Cornelian Cherry; a shrub or small tree producing an abundance of small yellow flowers in February; berries ¾ inch long, bright red.
- aurea**. Leaves suffused yellow.
- variegata**. Leaves margined white.
- officinalis**. Rare Korean species, similar to *C. mas* with yellow flowers; red fruits.

CORYLOPSIS. A group of very pretty, early spring flowering shrubs related to the Witch Hazel, but bearing their cup-shaped, primrose-yellow, fragrant flowers in drooping racemes.

- glabrescens**. (*Gotoana*) A tall growing Japanese species.
- pauciflora**. Densely branched shrub, not above 4 ft, exceedingly free-flowering and cow-slip scented.
- sisensis**. Tall shrub distinguished by its many-flowered racemes.
- spicata**. A spreading shrub up to 6 ft. high; leaves roundish, leathery and glaucous; flowers are bright yellow.
- Willmottiae**. An elegant shrub to 12 ft. with soft yellow, very fragrant flowers in long racemes.

NOTE: This list will continue in next issue; if you are interested in any of these rare shrubs and trees, reserve your wants NOW; send no money, we will advise later as to prices and delivery at which time you can either cancel or confirm.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

ERYTHRINA INDICA VAR. ALBA

This is the rare white flowered form of the spreading, deciduous, thorny Indian shade tree that is considerably planted in South Florida. Some related red-flowered species are planted in Southern California.

By E. A. Menninger

OMPHALODES LINIFOLIA

A charming little annual Borage, six to 12 inches high with cold white flowers sometimes tinged with blue.

It flowers from June to August, is very free flowering and pleasing.

PENSTEMONS IN CALIFORNIA

One grower reports from California that *Penstemon aridus*, Purdyi, Blue Bedder, Barrettae, Cardwelli, Crandalli, Davidsoni, Menziesi and Menziesi serophyllum are the best behaved Penstemons in her garden.

Others report that *P. rupicola* is a fine species with its mounds of silvery foliage surmounted by carmine-rose flowers.

However, another California grower reports *P. cyananthus*, confertus, Crandalli, caelestinus as good but gives up growing *P. rupicola*, Menziesi, Davidsoni and Cardwelli; so one can see much depends upon the particular grower, his desires and his growing conditions.

HARDY TROPICAL PLANTS

There are many ornamental plants native of the tropical regions that are hardy in the temperate zone. The reason for this is that they grow at high elevations in the tropics and thus have a similar climate so far as temperature is concerned, as if they grew farther north.

I would imagine that most plants belonging to this classification would be sun loving plants, because of the direct sun light in the tropics. Can some of our readers enlarge on this?

COLD STRATIFICATION OF SEEDS

Continued from Page 145

keep it moist. In some cases the peat or sphagnum has been found better. Some seeds do best when the medium has some acid reaction.

The temperature should be just above freezing and a real low temperature is not necessary, in fact in some cases even harmful. Of course the container should be such as to hold the moisture and not allow it to decrease. The medium should be just moist and moist clear thru, too. In the bottom of the container a false bottom should be made so as to hold the seed up out of any surplus water that may drain from the medium.

When seed is received early enough in the fall so that it can be sown, the winter treatment in the seed bed will save the stratification treatment but there are advantages in the spring planting. Loss from rodents is an important one and much work to keep them out of the seed bed can be saved. A good stirring of the soil can also be made in the spring as well as winter damaged that can come from so many different sources.

Some of the woody plants that require this treatment are: the Firs, Maples, Ailanthus, Alnus, Amelanchier, Aralia, Aronia or Chokeberry, Paw Paw, Barbary, Birch, Carpinus, Ceanothus, Bittersweet, Celtis or Hackberry, Cercis canadensis, Clematis, and best probably on all the woody species, Cornus or Dogwood, Corylus, Cotoneaster, and Crataegus or Hawthorne (peat).

Erionomus, Beech, Fremontia, Gaultheria, Helesia, Hamamelis or Witch Hazel, Juniperus, Larch, Ligustrum or Privet (sand or peat) Linderia Benzoin, Liqueambar or Sweet Gum, Liriodendron or Yellow Poplar (peat) Magnolia, Malus or Apple, Mulberry, Myrica or Southern Waxmyrtle (acid peat), Tupelo, Picea, Pines, Prunus or Plums, Rhamnus or Buckthorn, Ribes, Rosa blanda and probably all rose species, Sapindus or Western Soapberry, Sassafras, Sequoia, Shepherdia, Lilac, Tilia or Basswood, Ulmus or Elm and Viburnum. Of course there are a great many more and we will try to get this information into all the seed listings in the future. The change in the form of cataloging will do this better and is one of the main reasons for the change.



THE LATEST LIST OF TREE AND SHRUB SEEDS

Juniperus continued from Page 138

vulgare	.25	2.50
virginiana, Southern, clean	.45	4.53
— Platte River, db	.35	3.25
— clean and floated; 90 %	.70	7.00
— Wisconsin; cl. and floated	.60	5.75
— glauca, clean	.70	7.00
KALMIA (KAL-mee-ah) Mt. Laurel		
latifolia	2.00	
— New England seed	3.25	
KERRIA (KEHR-ree-ah)		
japonica	.65	8.00
KETELEERIA (ket-el-LEER-ee-ah)		
fortunei	.40	4.00
KOELREUTERIA (kel-roo-TEER-ee-ah)		
paniculata	.25	2.50
KOLKWTZIA (kol-KWITS-ee-ah)		
amabilis, clean, NE	2.50	
LABURNUM (lab-BURN-um)		
alpinum	.25	2.50
*pachyphloea, clean	.85	8.00
rigida, clean	.60	5.50
scopulorum, clean	.60	6.50
— dainty lvd S'ern form, clean	.75	7.00
watereri (alpinum x vulgare)	2.50	
LAGERSTROEMIA (lay-gur-STREEM-ee-ah)		
indica	.55	5.50
LARIX (LAR-ix) Larch		
europaea Central Alps, 3,000 el.	.65	8.00
— Southern Alps, 900-1,200 el.	.45	4.50
leptolepis	.90	6.50
occidentalis	1.25	11.00
LAURUS (LAW-rus) Laurel		
nobilis, clean	.25	2.25
LESPEDEZA (les-ped-DEEZ-ah)		
bicolor	.45	4.50
formosa	.40	4.00
LEUCOTHOE (lew-KOTH-oh-ee)		
catesbaei	1.50	4.00
LIBOCEDRUS (lye-boh-SEED-rus)		
decurrens	.30	3.00
LIGUSTRUM (lig-GUST-rum) Privet		
amurense, db	.30	2.75
ibota, db	.25	2.25
japonicum, clean	.30	3.00
lucidum, db	.30	2.75
sinense ("South" Privet) clean	.75	2.50
vulgare, db	.25	2.00
LIQUIDAMBAR (lik-wid-AM-ber)		
styraciflua	.50	5.00
LIPPIA (LIP-ee-ah)		
citriodora	2.50	
LIRODENDRON (lihr-ee-oh-DEN-dron)		
tulifera	.25	2.00
chinensis Latania borbonica	.40	4.00
LIVISTONA (liv-ist-TOH-nuh)		
chinensis (Latania borbonica)	.40	4.00
LONICERA (lon-NISS-er-ah) Honeysuckle		
alpigena db	.35	3.50
caprifolium, db	.35	3.50
chrysantha, db	2.50	
korolkowi zabeli, db	2.50	
morrrowi, db	1.00	
ruprechtiana, db	1.00	
tatarica, clean	.60	5.50

— alba, db	.75	
— wheeleri, (red), db	1.50	
xylosium, db	.30	3.00
LYCIUM (LISH-ee-um)		
horridum	2.00	
ternifolia	.45	4.50
MACADAMIA (mak-ah-DAM-ee-ah)		
MACLURA (mak-LOOR-ah)		
pomifera	.25	2.50
MAGNOLIA (mag-NOHL-ee-ah)		
acuminata, clean	.45	4.25
conspicua (Yulan), db	.40	3.75
glauca (virginiana), clean	.45	4.50
grandiflora, clean	.40	3.75
— a northern strain, 100 seeds	\$1.50	
kobus, clean	.55	5.00
liliflora, db	.45	4.50
macrophylla, db	.40	4.00
obovata (hypoleuca), clean	.50	5.50
sieboldi (parviflora) db choice sp- with lge fragrant white fls.	.55	5.50
soulangeana, db	.45	4.50
— lennei, db	.45	4.50
MAHONIA (mah-HOH-mee-ah)		
aquifolia, clean	.70	6.50
nervosa, db	.65	6.50
MALUS (MAY-lus) Apple		
baccata, clean seed	2.00	17.00
—, dried pomes	.30	3.00
— mandshurica, dried pomes	.80	3.00
coronaria, clean seed	.80	7.50
common, Stock Fr'ch Crab	.25	2.50
— for stock—domestic seed	.30	2.75
floribunda, clean seed	.75	7.50
ioensis, clean seed	1.50	
*sargentii, dried pomes, NE	1.25	
— Free blooming, dwarf or. Crab, true from seed	1.25	
sieboldi, clean seed	1.25	
theifera (hupehensis) dried pomes	.35	3.50
— Handsome small tree, free blooming. True from seed.		
zumi	1.25	
— calocarpa, dried pomes	.35	3.50
MELALEUCA (mel-al-LEW-kuh) Bottle B.		
leucadendron	1.25	
MELIA (MEE-lee-ah)		
azedarach	.30	3.00
MENISPERMUM (men-iss-SPERM-um)		
canadense	.30	3.00
MERATIA (mer-RAY-shee-ah)		
praecox	.35	3.00
MESPILUS (MESS-pil-us)		
germanica, clean seed	.30	2.50
MIMOSA (mim-MOH-suh)		
pudica	2.50	
MORUS (MOH-rus) Mulberry		
alba, clean seed	.35	3.50
— tatarica, clean seed	.35	5.00
nigra, clean seed	.50	4.50
MYRICA (MYE-rik-ah)		
carolinensis	.30	3.00
MYRTUS (MERT-us) Myrtle		
communis, clean seed	.65	6.00
— compacta	2.00	

NANDINA (nan-DIN-nah)		
domestica, home grown, berries	.35	3.50
— imported seed, clean	.40	4.00
— white berry imported, clean	.55	5.50
NEMOPANTHUS (nee-moh-PANTH-us)		
mucronatus, dried berries	.35	3.50
NERIUM (NEER-ee-um)		
oleander	.35	3.50
NYSSA (NISS-ah) Tupelo		
sylvestica, clean seed	.35	3.50
OLEA (OH-lee-ah) Olive		
europaea, from wild plants	.30	3.00
— cultivated varieties	.25	2.00
OXYDENDRON (ox-id-DEN-drum)		
arborescens, clean seed	2.25	
PAEONIA (pee-OH-nee-ah)		
suffruticosa (arborea or moutan) 25 sds	\$2.00	
— From choice collection named varieties.		
PALIURUS (pal-ee-YEW-rus)		
aculeatus (spina-christi), clean	.25	2.50
PARKINSONIA (park-in-SO-nee-ah)		
aculeata	.55	5.00
PAULOWNIA (pol LOH-nee-ah)		
tomentosa	.30	2.50
PHASEOLUS (fas-SEE-ol-us)		
caracalla	100 seeds	\$1.75
PHELLODENDRON (fel-lon-DEN-dron)		
amurense	.55	5.00
PHILADELPHUS (fil-ad-DELPH-us)		
coronarius, clean seed	.45	4.50
— garden varieties	1.50	
grandiflorus	.50	5.00
PHOENIX (FEE-nix)		
canariensis	.25	1.50
dactylifera	.30	3.00
reclinata	.30	3.00
roebeleni	250 seeds	\$2.25
sylvestris	.30	2.75
PHOTINIA (foh-TIN-ee-ah)		
glabra	.40	4.00
villosa, clean seed	.50	5.00
PICEA (PYE-see-ah) Spruce		
canadensis, domestic	1.80	18.00
engelmanni	.75	7.50
excelsa (abies) N Eur. vigorous	.60	5.00
jezoensis hondoensis	.75	7.50
mariana	2.50	19.00
*omorika	4.50	
orientalis	.60	6.00
polita	.75	7.50
pungens glauca	1.75	
sitchensis	1.35	13.50
PIERIS (py-ER-is)		
floribunda, N.E.	2.00	
floribunda	2.00	
japonica	2.25	
taiwanensis	3.50	
PINUS (pi-NUS) Pine		
banksiana	.65	6.50
caribaea	.65	5.00
cembra	.25	2.00
contorta	.90	8.75
— latifolia (murrayana)	1.00	10.00
coulteri	.65	6.00
densiflora	.35	3.50
echinata	1.25	12.00

Packets 25¢ each	per	Oz.	Lb.
<i>edulis</i> (cembroides <i>edulis</i>)35	3.50
<i>excelsa</i> (griffithi)25	2.50
<i>flexilis</i>25	2.50
<i>halepensis</i>25	2.50
<i>jeffreyi</i>50	5.00
<i>koraiensis</i>35	3.50
<i>jambertiana</i>35	3.50
<i>maritima</i> (pinaster)25	2.00
<i>massoniana</i>70	
<i>monophylla</i> (C. <i>monophylla</i>)35	3.50
<i>montana</i> (mugo) lowland seed40	4.00
— gallica80	8.00
— mughus dwarf type; Eu. Alps55	5.50
— uncinata (rostrata) Eu. Alps55	5.50
<i>montezumae</i>75	7.50
<i>monticola</i>75	7.50
<i>muricata</i>75	7.50
<i>nigra</i> , Hill Strain, Austrian45	4.50
— <i>poiretiana</i> Calabria40	4.00
<i>palustris</i>40	3.75
<i>parviflora</i> (pentaphylla)45	4.50
<i>pinea</i>25	1.75
<i>ponderosa</i> (Timber Strain)50	5.00
<i>radiata</i> (insignis)65	6.50
<i>resinosa</i>	3.25	30.00
<i>rigida</i> , N. E.35	3.50
<i>sabiniana</i>25	2.50
<i>strobilus</i> , Lake States Strain45	4.50
<i>sylvestris</i>80	8.00

Several strains offered with special Christmas Tree types, fast growing ornamental strains; ask for prices.

<i>taeda</i>	.....	.70	6.50
<i>thunbergi</i>	.....	.40	4.00
<i>torreyana</i>	.....	1.40	11.00

PITTOSPORUM (pit-TOSP-or-um)			
<i>crassifolium</i>	.....	.75	7.50
<i>eugenoides</i>	.....	.85	8.50
<i>tobira</i> , clean seed	.....	.35	3.50
<i>undulatum</i> , clean seed	.....	.45	4.50

PLATANUS (PLAT-an-us) Plane Tree			
<i>occidentalis</i>	.....	.25	1.35
— clean seed	.....	.25	2.25
<i>orientalis</i> , clean seed	.....	.25	2.00

PLUMBAGO (plum-BAY-go)			
<i>capensis</i>	.....	1,000 seeds	\$4.00

POINCIANA (poyn-see AY-nuh)			
<i>gillesi</i>	.....	.45	4.50
<i>regia</i> (Delonix)	.....	.90	

PRUNUS (proon-US) Plum			
<i>americana</i> , clean seed	.....	.25	2.50
<i>amygdalus</i> Sweet Almond	.....	.25	1.25
— Bitter Almond	.....	.25	1.75
<i>armeniaca</i> clean seed (Apricot)	.....	.20	.90
— <i>ansu</i> , clean hardy	.....	.25	2.00

Japanese Apricot, close to <i>mandshurica</i> with better fruit.	.....	.25	2.00
<i>avium</i> , Mazzard, clean seed	.....	.25	2.00
<i>cerasifera</i> , (Myrobalan), clean	.....	.25	2.00
<i>demissa melanocarpa</i> , clean	.....	.30	2.75
<i>glandulosa</i> , d. b.	.....	1.50	

<i>ilicifolia</i> , clean seed	.....	.30	3.00
<i>incisa</i> , d. b. domestic, N. E. seed	.....	1.50	
— clean seed, imported	.....	.55	6.00
<i>lannesiana</i> , clean seed	.....	.35	3.25
<i>lyoni</i> , (integrifolia), clean seed	.....	.30	3.00

<i>lusitanica</i> , clean	.....	.35	3.50
<i>mahaleb</i> , clean seed	.....	.30	3.00
<i>maritima</i> , N. E., d. b.	.....	.25	3.50
— with thin skinned fruits	.....	.75	
<i>mume</i> , clean seed	.....	.25	2.50

<i>officinalis</i>	.....	.20	2.00
<i>podus</i> N. E., d. b.	.....	.90	
<i>pennsylvanica</i>	.....	.40	3.25
<i>persica</i> (Peach), Lovell variety	.....	.20	1.00
<i>salicina</i>	.....	.25	2.25

<i>sargentii</i> (serrulata sac.) clean	.....	.40	4.00
<i>serotina</i> , clean, N. E.	.....	.30	3.00
<i>serrulata</i> , clean seed	.....	.35	4.00
<i>spinosa</i> , clean seed	.....	.25	2.00
<i>subhirtella</i> , clean seed	.....	.35	3.50

— <i>pendula</i> , clean seed	.....	.45	4.50
<i>tomentosa</i> , clean seed	.....	.35	3.50
<i>virginiana</i> , d. b.	.....	.25	2.25
<i>yedoensis</i>	.....	.35	3.50

PSEUDOLARIX (soo-doh-LAR-ix)			
<i>kaempferi</i> (amabilis)	.....	.40	4.00

PSEUDOTSUGA (soo-doh-TSOO-gah)			
<i>douglasii</i> Fraser River type	.....	1.15	11.00
— <i>glauca</i> , Colorado strain	.....	1.35	
— <i>viridis</i> , Coast form, Oregon	.....	1.25	11.00

PTELEA (TEEL-ee-ah)			
<i>trifoliata</i>	.....	.25	2.25

PUERARIA (pew-er-RAY-ree-ah)			
<i>thunbergiana</i>	.....	.35	3.00

PUNICA (PEW-nik-ah)			
<i>granatum</i>	.....	.35	3.50

PYRACANTHA (pye-ruh KANTH-ah)			
<i>coccinea</i> lalandi, clean seed	.....	.25	4.00

PYRUS (PYE-rus) Pear			
common pear, domestic seed	.....	.40	4.00
<i>serotina</i>	.....	.60	6.50

RAPHIOLEPIS (raf-ee-OL-ep-iss)			
<i>ovata</i> (japonica)	.....	.45	4.50

RHAMNUS (RAM-nus)			
<i>cathartica</i> , clean seed	.....	.35	3.50

<i>crenata</i> , N. E. better than next.	.....	.90	
<i>frangula</i> , clean seed	.....	.45	4.50
<i>purshiana</i> , clean seed	.....	.45	4.50

RHODODENDRON (roh-doh-DEN-dron)			
<i>arboreum</i>	.....	1.50	

<i>auriculatum</i>	.....	Pkt. 75¢	
<i>cantabile</i>	.....	Pkt. 75¢	
<i>carolinianum</i> from wild plants	.....	3.00\$	
<i>catawbiense</i>	.....	Pkt. 50¢	
— <i>compactum</i> , N. E.	.....	Pkt. 50¢	
<i>discolor</i>	.....	Pkt. 75¢	
<i>fortunei</i> x hardy Hybrids	.....	Pkt. 75¢	
<i>grande</i>	.....	Pkt. 75¢	
<i>griffithianum</i> v. <i>aucklandi</i>	.....	Pkt. 75¢	
<i>hippophaeoides</i>	.....	Pkt. 75¢	
<i>maximum</i> , from wild plants	.....	Pkt. 75¢	
<i>ponicum</i> , So. Europe	.....	Pkt. 75¢	
— No. Europe, garden strain	.....	Pkt. 75¢	



RHODOTYPOS (roh-doh-TYE-pus)			
<i>kerriodes</i>	.....	.45	4.50

RHUS (RUSS) Sumac			
<i>canadensis</i> (aromatica) clean	.....	.25	2.50

<i>copallina</i>	.....	.25	2.50
<i>coitinus</i> , clean seed30	2.75

<i>glabra</i>25	2.25
<i>lobata</i> , clean seed35	3.50

<i>typhina</i>25	2.25
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RIBES (RY-beez) Currant			
<i>aureum</i> , d. b., N. E.	1.00	

ROBINIA (roh-BIN-ee-ah)			
<i>hispidia</i> fertilis	1.60	

<i>pseudoacacia</i>	.....	.25	1.75
— <i>inermis</i>	.....	.35	3.50

ROSA Rose			
<i>blanda</i> , d. b.	.....	.25	2.25

<i>canina</i> , clean seed	.....	.25	1.75
<i>humilis</i> , d. b.	.....	.35	3.25

<i>lucida</i> (virginiana) clean seed	.....	.55	5.50
<i>maximowicziana</i>	.....	1.25	

<i>multiflora</i> , thornless, clean	.....	.45	4.50
<i>palustris</i> , d. b.	.....	.30	3.00

<i>primula</i>	.....	2.00	
<i>rubiginosa</i> , clean (eglanteria)	.....	.35	3.25

<i>rugosa</i> , clean seed	.....	.35	3.25
— Deep Red Sel. N. E., clean	.....	.70	

— White, N. E., clean seed	.....	.55	5.50
<i>setigera</i> , clean seed	.....	.55	5.50

<i>spinossissima</i> , clean seed	.....	.40	4.50
<i>wichuraiana</i> , clean seed	.....	.40	4.00

RUSCUS (RUS-cus)			
<i>aculeatus</i> , clean seed	.....	.30	3.00

SABAL (SAY-bal) Palmetto			
<i>blackburniana</i>	500 seeds	\$3.50

<i>minor</i> (adamsoni)	500 seeds	\$3.50
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SAMBUCUS (sam-BEW-kus) Elder			
<i>canadensis</i> , clean seed35	3.75

<i>coerulea</i> (glauca) N. Rockies40	3.75
<i>nigra</i> , clean seed25	3.50

<i>racemosa</i> , clean seed40	3.75
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SAPINDUS (sah-PIN-dus Soap-berry)			
<i>drummondii</i>35	3.50

SASSAFRAS (SAS-ah-frass)			
<i>varifolium</i>25	2.50

CHINUS (SKYE-nus)			
<i>mollis</i>25	2.50

<i>terebinthifolius</i>35	3.50
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SCIADOPITYS (sy-ah-DOP-e-tis)			
<i>verticillata</i>80	3.50

SEAFORTHIA (see-FORH-ee-ah)			
<i>elegans</i>	250 seeds	\$2.00

SEQUOIA (see-KWOY-ah)			
<i>gigantea</i>	1.75	15.00

<i>sempervirens</i> , Calif. seed only80	8.00
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SHEPHERDIA (shep-HERD-ee-ah)			
<i>argentea</i> , d. b.40	4.00

<i>canadensis</i> , d. b.60	3.50
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SKIMMIA (SKIM-mee-ah)			
<i>japonica</i> d. b.35	3.50

SOPHORA (soh-FOH-rah)			
<i>japonica</i>25	2.50

— seed from <i>pendula</i> form25	2.50
<i>vicifolia</i>	.....	4.50	

SORBUS (SOR-bus)			
<i>americana</i> , d. b.	.....	.40	4.00

<i>aria</i> , clean seed	.....	.45	4.00
<i>aucuparis</i> , domestic, d. b.	.....	.25	2.50
<i>commixta</i> , d. b.	.....	.70	
<i>domestica</i> , clean seed	.....	1.25	
<i>torminalis</i> , clean seed	.....	.60	

SPARTIUM (SPAR-tee-um)			
<i>juncum</i>	.....	.25	2.00

STAPHYLEA (stap-il-LEE-ah)			
<i>trifolia</i>	.....	.35	3.50

STEWARTIA (stew-ART-ee-ah)			
<i>koraeana</i> , N. E.	.....	Pkt. 75¢	

<i>monadelphica</i> , N. E.	.....	Pkt. 75¢	
<i>pseudocamellia</i>	.....	.75	6.00

STYRAX (STYE-rax)			
<i>americana</i>	.....	.25	2.25

<i>japonica</i>	.....	.50	3.00
<i>obassia</i>	.....	.60	4.25

SWONTZIA			
<i>madagascariensis</i>	.....	Pkt. 75¢	

SYMPHORICARPOS (sim-for-ik-KARP-os)			
<i>racemosus</i> , clean seed35	3.50

<i>vulgaris</i> , d. b.35	3.50
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SYMPLOCOS (sim-PLOH-kos)			
<i>paniculata</i> , d. b. N. E.75	

SYRINGA (si-RIN-gah) Lilac			
<i>henryi</i> (vilosa x <i>josikaea</i>) clean	1.50	

<i>josikaea</i> , clean seed85	7.50
— <i>rosea</i> , clean seed	1.25	

<i>villosa</i>	1.25	8.50
<i>vulgaris</i> , clean seed50	5.00

— <i>nana</i>90	
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TAMARIX (TAM-ah-rjx)			
<i>gallica</i>25	2.50

TAXODIUM (tax-OH-dee-um)			
<i>distichum</i>25	2.25

TAXUS (TAX-us)			
<i>baccata</i>	.....	.25	2.50

— <i>erecta</i> , d. b., N. E.	.....	1.50	
<i>cuspidata</i> , home grown, d. b.	.....	.65	1.

Saier's GARDEN MAGAZINE

DIMONDALE, MICHIGAN.

VOL. 2. No. 16.

OCTOBER 1951.

Owner and publisher of Saier's Garden Magazine, Harry E. Saier, Dimondale, Mich. Issued each month. Subscription price \$2.00 per year; 2 years \$3.00; single copies 25 cents.

Send all seed orders to the Pioneer Seed Company, Dimondale, Michigan.

SUBSCRIPTIONS AS XMAS GIFTS

A letter just received from Mrs. Betty Hale Ferguson of Dallas, Texas, bring up the subject of subscriptions to SAIER'S GARDEN MAGAZINES as suitable Christmas presents. We have had this in mind and this will be found in another column.

She kindly writes as follows: "I found the listings of the Pioneer Seed Company about five years ago and from the seed paper I have ordered seeds at different times since. I have always found them to be very satisfactory:

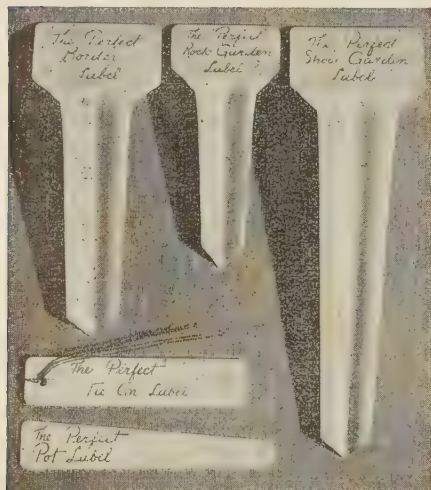
I subscribed to your Garden Magazine and it started with the first issue. I am highly pleased with it and would like to give subscriptions as Christmas gifts. Will you please advise me when I should send the subscription information? Also, could it be arranged that each recipient of a subscription would receive the Seed Book to be released in January, without further ordering by me or the person?"

It is our intention to save out four or
Continued on Page 151

PERFECT LABEL

MARK with ORDINARY LEAD PENCIL

Mark with your ordinary lead pencil; it is permanent and will not fade or become unreadable. If you wish to make any changes an ordinary eraser will remove the writing.



PRICES

5 inch; width of marking space 2 inches:
12 labels; \$1.25; 25 for \$2.40; 100 \$9.25
7 inch; width of marking space 2 1/8 inches.
12 labels: \$1.50; 25, \$2.90; 100, \$11.25.

PIONEER SEED COMPANY
DIMONDALE, MICHIGAN

TROLLIUS - URSINIA - VERBENA

TROLLIUS. (TROL-ee-us) GLOBE FLOWER. Ranunculaceae.

They make nice spring flowering plants in the border if planted in a low moist place with some shade. Colors are yellow or orange and in form Buttercup-like; easy.

- albiflorus. Creamy white fls; 15"; HP..... TROL-2. 25¢
- europaeus. Globe Fl. (St. Wolfgang); lemon-yellow; 2" ac; HP..... TROL-8W. 25¢
- Orange Princess. Pretty orange variety; 1 ft; HP..... TROL-8P. 25¢
- Ledebourii. Yellow fls; 2 ft; sunny place in bog garden; HP..... TROL-19. 25¢
- patulus. Soft yellow fls; 2 ft; for the brook side; HP..... TROL-19T. 25¢
- pumilus. Alpine King-cup. Golden yellow cups; 10"; pretty; HP..... TROL-20. 25¢
- Trollius Blend. All above species mixed..... TROL-X. 20¢

TULIPA. (TEW-li-uh) TULIP. Liliaceae.

Growing Tulips from seed is interesting, especially so with the species. Usually these come true from seed; they are easily grown but the seeds do not germinate quickly. The species, or Botanical Tulips, are very pretty and should be grown more.

- biflora. RG sp, star-like fls white or yellow; 5"; HBB..... TULP-4. 20¢
- Clusiana v chrysantha. Golden yellow vase-shaped; 6"; HBB..... TULP-9C. 20¢
- stellata. White or yellow; pretty; 8"; HBB..... TULP-9S. 25¢
- Kaufmanniana. Beautiful; water lily-like; white, yellow, pink 8"..... TULP-25. 25¢
- Sprangeri. Bright red; funnel-shaped in bud; last to flower; 12"..... TULP-47. 25¢
- sylvestris. Bright yellow, frag; 9-18"; HBB..... TULP-51(C). 30¢
- Tulip Blend. All above mixed..... TULP-X. 20¢

TUNICA. (TOO-nik-uh) TUNIC FLOWER. Caryophyllaceae.

Herbaceous annuals and perennials similar to Dianthus in growth but smaller. For edging or the rockery.

- saxifraga. Tufted, spreading; pink fls; HP..... TUNI-2. 20¢

UNIOLA. (eu-NA-oh-lah) Gramineae.

North American perennial grasses with prominent 2-edged spikelets borne in panicles.

- latifolia. Pretty n thie border; 5 ft; HP..... UNIO-1. 15¢

URSINIA. (ur-SIN-ee-uh) Compositae.

South American annuals and perennials, the flowers daisy-like, solitary or loosely clustered. Sow seeds early indoors or direct to soil. Treat as an annual.

- anethoides. Jewels-of-the-Veldt. Orange fls purple centers; 18" HA..... URSN-1. 20¢
- aurora. Brilliant orange; crimson zone; HA..... URSN-1A. 20¢
- cakilifolia. Yellow or orange; S. Rhodesia..... URSN-5. 25¢
- pulchra compacta. Yellow or orange, 2" ac; rays br-purple; 2 ft; HA..... URSN-7. 20¢
- Ursinia Blend. Above mixed and many pretty hybrids..... URSN-X. 15¢

VACCINIUM. (vak-SIN-ee-um) BLUEBERRY, CRANBERRY. Ericaceae.

Hardy shrubs and trees grown for ornament or for their edible fruits and all thriving in rather acid soils of a peaty sand nature. Sow the seeds in the fall or stratify till spring. If interested in quantity of seed write for prices.

- augustifolium. (pennsylvanicum) Dec; bluish black fr; 1 ft; HSh..... VAC-1. 25¢
- canadense. Deciduous; fr; blue; 1-2 ft; HSh..... VAC-6. 25¢
- corymbosum. Highbush or Swamp B; Wortleberry; 15 ft; HSh..... VAC-7. 25¢
- Seed from large fruited named varieties..... VAC-7N. 25¢
- Mixed Vacciniums. All above mixed..... VAC-X. 20¢

VALERIANA. (val-er-ee-AY-nuh) VALERIAN. Valerianaceae.

Perennial plants and shrubs with small white or rose flowers in cymes or spikes. Very easy to grow in the border; they are very fragrant.

- officinalis. Garden Heliotrope. Popular; pink, red, white fls; 4 ft; HP VAL-12X. 15¢
- White..... VAL-12W. 15¢
- Red..... VAL-12R. 15¢
- rubra: see *Centranthus rubra*.

VERBASCUM. (ver-BASK-um) MULLEIN. Scrophulariaceae.

Mostly tall hardy biennials; making good specimens in the back ground of the border; thrive in most any soil and are easy to grow.

- paniculatum alba..... VEBS-18. 25¢
- phoeniceum hybrids. Purple and red fls in racemes; 4 ft; HB..... VEBS-19. 20¢

VERBENA. (ver-BEE-nuh) Verbenaceae.

Germ. 10 days.

Mostly perennials and highly prized for their profuse blooming. In the North they are grown as hardy annuals but in the far South they can be sown as perennials. In the North start seeds indoors for real early flowers; set 1 ft. apart in a sunny place.

V. TEUCRIODES: To which probably belong most of the popular garden varieties. The varieties following are the very best and all mammoth in size.

- Daneborg. Scarlet with showy white eye..... VERB-1D. 15¢
- Elna. Large trusses of intense geranium-red fls..... VERB-1E. 15¢
- Lavender Glory. Pretty shades of lavender with cream eye..... VERB-1L. 15¢
- Luminosa. Pink shaded to salmon..... VERB-1M. 15¢
- Gigantea Mixed. Above and many other colors..... VERB-1GX. 15¢
- compacta, Mixed. Low growing, 6"; for edging or bedding..... VERB-1CX. 20¢

VERBENA SPECIES:

- bipinnatifida. Lilac-purple fls in loose clusters; showy; HP..... VERB-2. 20¢
- canadensis. (aubletia) Violet-red; June to frost; 10"; *HP..... VERB-5. 20¢

VERBESINA. (ver-bes-SYE-nuh) Compositae.

Am. plants and shrubs, yellow, orange or white flowers, solitary or in panicked heads.

- enceliodes. Golden yellow rays, 2" ac; TA..... VEBE-3. 20¢

VERONICA. (ver-RON-ik-uh) SPEEDWELL. Scrophulariaceae.

Annual and perennial plants popular in the rockery or border, hardy, free flowering and thriving in a sunny or light shady place; they are easy from seed.

- spicata mixed. Blues, reds, pink, white fls; 18"; HP..... VERO-70X. 15¢
- nana alba. Low growing strain; white flowers..... VERO-70NA. 20¢
- Blue Shades..... VERO-70B. 15¢
- Blue Sky. Pretty sky blue variety..... VERO-70S. 15¢

NOTE: It is our intention that these seed lists be correct, both as to classification and to descriptions. We use Hortus II as our authority. If any of our readers note a mistake, we will certainly deem it a favor if it is pointed out to us.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

VERNONIA - VIBURNUM - VINCA

VERNONIA. (ver-NOH-nee-uh) IRONWEED. Compositae.

Herbaceous perennials in the North and tropical trees and shrubs in the South. The flowers are showy and in purple, pink or white heads of disk flowers, in terminal clusters. Bloom late in the summer and autumn; easily grown for border or wild garden.

- glabra.** Deep blue; 1-2 ft; good for cutting; S. Rhodesia; TP..... **VERN-6.** 25¢
- karongensis.** Bright purple; 1-2 ft; dandy; S. Af; TP..... **VERN-9.** 25¢
- melleri.** Sky blue, a large plant; S. Rhodesia; TP..... **VERN-12.** 25¢
- Vernonia Blend.** All above mixed..... **VERN-X.** 20¢

VIBURNUM. (vy-BURN-um) SNOWBALL. Caprifoliaceae.

These are one of the most popular ornamental shrubs. They should also be grown more as bird refuges for their fruits make excellent winter feed for all kinds of wild life. The seed should be stratified in the fall and planted in the spring when they germinate readily.

- acerifolium.** Dockmackie. White, cymes; May-June; 6 ft; HSh..... **VIB-1.** 25¢
- alnifolium.** Hobble Bush, Am. Wayfaring T. White, May-June; 10'; HSh..... **VIB-2.** 25¢
- americanum:** see **V. trilobum.**
- Carlesii.** White, fragrant; dense cymes; April-May; 5 ft; HSh..... **VIB-12.** 25¢
- cassinoides.** White Rod. White, cymes; June-July; 12 ft; HSh..... **VIB-13.** 25¢
- dentatum.** Arrow Wood. White, cymes; May-June; 15 ft; HSh..... **VIB-20.** 25¢
- dilatatum.** White, cymes; May-June; fr scarlet; 10 ft; HSh..... **VIB-21.** 25¢
- Lantana.** Wayfaring T. White, cymes, 4' ac; May-June; 15 ft; HSh..... **VIB-36.** 25¢
- Lentago.** Sheep Berry. White, cymes; May-June; hardy; to 30 ft; HSh..... **VIB-37.** 25¢
- odoratissimum.** White, fragrant; panicles; May-June; 10 ft; HSh..... **VIB-46.** 25¢
- opulus.** Eu. Cranberry Bush. White; May-June; 12 ft; HSh..... **VIB-47.** 25¢
- prunifolium.** Black Haw. White, cymes, 4' ac; April-May; 15 ft; HSh..... **VIB-52.** 25¢
- Sieboldii.** Creamy white, panicles; May-June; 10 ft; Japan; HSh..... **VIB-65.** 25¢
- Tinus.** Laurestinus. White or pinkish, grown in GH; 10 ft; HSh..... **VIB-68.** 25¢
- trilobus.** Cranberry Bush. White, cymes; May-June; 12 ft; HSh..... **VIB-69.** 25¢
- Wrightii.** White, cymes; May-June; 10 ft; Japan; HSh..... **VIB-77.** 25¢
- Viburnum Mixture.** All above species mixed..... **VIB-X.** 25¢

VIDORELLA. (vid-o-RELL-ah)

Seeds from S. Rhodesia; better classification later.

- residifolia.** Small bright yellow globular fl heads; for S..... **VIDO-1.** 25¢

VINCA. (VIN-kah) PERIWINKLE. Aprocynaceae.

Erect and trailing plants. They are useful for ground cover and in vases and baskets. Thrive in moist shady places.

- rosea, Mixed.** Sow seeds early in warm place; the GH Vinca..... **VINC-4X.** 15¢
- Pure White.** **VINC-4W.** 15¢
- Crimson.** **VINC-4C.** 15¢
- White with Pink Eye.** **VINC-4B.** 15¢
- Soft Pink.** **VINC-4P.** 15¢
- Rose.** **VINC-4R.** 15¢

VIOLA. (vye-OL-uh) VIOLET. Violaceae.

The genus consists of many attractive herbaceous perennials and a few annuals. The Violet and Pansy are the two most popular. They all thrive in a rich soil and in partial shade. During winter they are require a mulch of leaves. The germination of Violets is different from that of Pansies; if handled the same way, good results will seldom be gotten. Try planting the Violets in the fall, in flats, leaving them outside to get the freezing weather, when they germinate good the first thing in the spring.

VIOLA CORNUTA: Horned Violets. More or less tufted Violets. They come in many varieties of which the best and most popular are listed here. They do best in partial shade, rich moist soil and where it does not dry out too much in the summer.

- Arkwhight Ruby.** Rich crimson with dark eye..... **VIOL-1A.** 20¢
- Bicolor.** Light violet-blue; very pretty..... **VIOL-1B.** 20¢
- Blaue Schonheit.** Clear deep blue; new German variety; fine..... **VIOL-1BS.** 20¢
- Blue Gem.** Jersey Gem. Compact violet-blue..... **VIOL-1BG.** 20¢
- Chantreyland.** Pure apricot; free flowering..... **VIOL-1C.** 20¢
- White Gem.** Pure white; dandy..... **VIOL-1W.** 20¢
- Ilona.** A very pretty wine-red..... **VIOL-1L.** 20¢
- King Henry I.** Deep violet with heavenly blue center, bright eye..... **VIOL-1H.** 20¢
- Lord Nelson.** Large violet-purple..... **VIOL-1N.** 20¢
- Lutea splendens.** Large golden yellow..... **VIOL-1S.** 20¢
- Papilio.** Light blue with white spots..... **VIOL-1P.** 20¢
- Thuringia.** Dark blue with white eye..... **VIOL-1T.** 20¢
- Gem Varieties Mixed.** Compact growing strain..... **VIOL-1XG.** 20¢
- Viola Blend.** Blend of all the above varieties..... **Oz. \$5.00** **VIOL-1X.** 20¢
- W-F Blend.** Bright gay colors in selfs, colors of reds, yellow, blue and apricot combined with many shades which are blotched; Oz. \$6.00..... **VIOL-1WF.** 25¢

VIOLA SPECIES: All hardy perennials.

- adunca.** Very hardy woodland Violet; violet; 4'; Alaska..... **VIOL-2.** 25¢
- bellidifolia.** Dwarf matted; violet or purple fls; 3'; Rockies..... **VIOL-15.** 25¢
- Douglasii.** Orange-yellow veined purple; gritty soil; 4'; Calif..... **VIOL-34.** 25¢
- glabella.** Big bright yellow fls; 12"; Alaska..... **VIOL-48.** 25¢
- Hallii.** Upper petals dark violet, lower white; 4'; Ore..... **VIOL-53.** 25¢
- nigra, Black Imp.** Quaint little Pansies; black velvet, small eye..... **VIOL-79.** 25¢
- saxatilis.** Dawnside Strain of Johnny-Jump-Ups. This is an exceptional strain and we receive many fine comments on it every year; best as annual..... **VIOL-114D.** 25¢
- sempervirens.** (sarmentosa) Yellow fls; decumbent; B. C..... **VIOL-116.** 25¢
- Viola species Blend.** Blend of above species only..... **VIOL-XS.** 25¢
- Viola Blend.** All kinds mixed..... **1/4 Oz. \$2.00** **VIOL-X.** 20¢

VIRGINIA STOCKS: see **Malcomia.**

VISCARIA: see **Lychnis.**

WALLFLOWER: see **Cheiranthus cheiri.**

WOODFORDIA. (wood-FOR-de-ah).

—**fruticosa.** Small red fls; Indian tr of Crape Myrtle Fam. for far S.... **WOOF-1(M).** 35¢

XANTHISMA. (zanth-IS-mah) Compositae.

Annuals and perennials native of Texas; solitary heads of yellow flowers for the border. They make good cut flowers.

—**texanum.** Star of Texas. Heads 2" ac; summer; 4 ft; TA..... **ZANT-1.** 20¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

IRIS RETURNED!!

We have had two boxes of Iris returned by the post office this week for lack of address! The address was on gummed labels and also shipping tag showing the nursery inspection. Both boxes were in a bad condition, crushed and broken; so much so that the string or twine that tied the box, was even gone.

Unfortunately we have no way of telling to whom these boxes belong and will have to await complaints.

SUBSCRIPTIONS AS XMAS GIFTS

Continued from Page 150

five sections of the October and November issues and add them to the December issue, making the special magazine to around 100 pages. This will be mailed so as to be delivered before Christmas and the actual subscription to start with the January issue.

This will also include all seed lists by the Pioneer Seed Company.

The subscription price at present is only \$2.00 per year but this will have to increased soon, because of the continual increase in expenses in the publishing trade. Also, because of a limited staff, the earlier these subscriptions can be received, the easier it will be for us to take care of them; possibly we can prepare a special Xmas envelope for them.

Those wishing to send five single subscriptions - to five different addresses - we will allow a special Xmas price of \$7.50 for the five subscriptions.

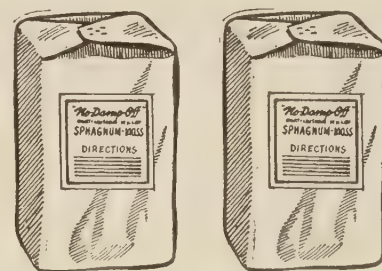
SOME TROPICAL SEEDS

Calliandra surinamensis, an evergreen large shrub or small tree from Dutch Guiana, flowers with pretty white stamens, the tips brightly tinted pink. They resemble much the Mimosa tree (*Albizia julibrissin*) that is widely planted for ornament through Georgia and South Carolina. However, this *Calliandra* is evergreen and is only half hardy.

By E. A. Menninger

Decussatus: dee-kuss-SAY-tus; arranged in pairs, (decussate).

SPHAGNUM FOR GERMINATING



It is simply impossible to germinate many seeds without the use of milled sphagnum moss. If you were over your seed pans all day long as the professional grower is you may find you could get along without it, but no professional grower would fail to have the fine moss on hand. It will save many a packet of valuable seed from loss due to an hours neglect, that cannot be avoided by one having other duties.

BUSHEL BAGS: \$2.25, postpaid... This will last the average grower a year.

PIONEER SEED COMPANY
Dimondale, Michigan.

ADVENTURES WITH CRINUMS

By Cecil Houdyshel, Calif.

Continued from Page 145

name immortal by producing Amaryllis Johnsoni. Many others have gained fame; why not try producing new types of crosses between Crinums and BRUNSVIGIAS?

EDITOR' NOTE: We are pleased to reprint this article which was in the Bulb Society bulletin for September. It contains much of interest on Crinums which should be recorded. We also agree with Mr. Houdyshel, in more gardeners becoming interested in breeding or improving different flowers; there is a big opening in this, especially with the more rare types. It is our intention to have more reading matter on this subject during the winter. By the way those of our readers who would like to join the Bulb Society, should write them at 345 W. Colorado St., Arcadia, Calif.

MATRIMONY VINE?

We have a terrible pest in our backyard and I am asking your advice about getting rid of it. I am not sure just what it is but my mother called it Privet Vine. It isn't really a vine but grows tall and just leans on a support. It is woody; has a few thorns long slender leaves and a very small purple bloom. My husband and I have tried to dig it out but it keeps cropping up and spreading. Plants come up 20 feet from where the original plant grew.

Mrs. J. C. Gamble, Mont.

Your plant is the Matrimony Vine (Lycium). While it has underground suckers, it has never been invasive with us altho it does seem hard to kill out. If you had a plant or two, it could be dug out easily but one would want to watch carefully that a new growth did not come up and if it does to immediately dig it out. However, it should not be hard to kill if you did not let it leaf out.

If treated early in the spring, when the growth is soft, some of the chemical weed killers might kill it out. Probably some of our readers have had practical experience in this work and will give their method.

CALONYCTION TUBA (Ipomaea Tuba)

We have been growing this vine for four years and wondered why it did not blossom. We learned why this year! A host of very small caterpillars eat the buds when first forming; larger caterpillars bore and use the buds for their young. I sprayed and gathered large and small caterpillars every morning for 30 days this season and now the buds are ripening their seeds and another insect bores and lays its eggs within.

It appears we will not have seed this year. The bulbs do not multiply but we will try taking mature cutting after seeding.

I have grown flowers for 60 years and have never yet seen so beautiful a tubular blossom as this one.

Paul A. Girouard, Fla.

Dichotomus: (dye-KOT-om-us), forked or two-branched.

TREE and SHRUB SEEDS

Continued from Page 149

corymbosum d. b. ....	.95	
pennsylvanicum, d. b.	1.25	
VIBURNUM (vye-BURN-um)		
acerifolium, clean seed .....	.65	6.00
alnifolium, clean seed .....	.65	6.00
americanum (trilobum), clean ....	.90	9.00
carlesi hybrids	2.00	

PIONEER SEED COMPANY
Dimondale, Michigan, U. S. A.

XERANTHEMUM - ZINNIAS

XERANTHEMUM. (zeer-ANTH-em-um) IMMORTELLE. Compositae.

Easily grown annual everlasting flower with solitary heads of disk flowers. They are good as cut flowers and very popular for drying. Sow seeds early in the spring.

—annuum, Mixed. 3ft; double flowers.....	XERN-IDX. 15¢
—Purple. Double flowers.....	XERN-IDP. 15¢
—Rose. Double flowers.....	XERN-IDR. 15¢
—White. Double pure white.....	XERN-IDW. 15¢

PRICE: Oz. 55¢; ¼ Oz. \$2.00; 1 lb. \$5.00, prepaid.

YUCCA. (YUKK-uh) Adam's Needle, Spanish Bayonet, Joshua Tree. Liliaceae.

Suitable for bold effect in the border or for specimen plants on the lawn. Some are hardy, others need greenhouse care in the North. All easily grown from seeds.

—filamentosa. Reclassified recently to Y. Smalliana, which see.	
—glauca. Greenish white fls; fls to 6 ft; lvs to 3 ft; hardy in North.....	YUCC-14. 25¢
—gloriosa. Fls greenish white to reddish; lvs to 2½ ft; fls to 8 ft; HHP....	YUCC-15. 25¢
—mohavensis. Mojave Y. 10 ft; fls purple-white; HHP.....	YUCC-20. 25¢
—Smalliana. Adam's Needle. White; fls to 12 ft; hardy in North.....	YUCC-25. 20¢
—Yucca Blend. Above species mixed.....	YUCC-X. 20¢

ZINNIA. (ZINN-ee-uh) (crassima) Compositae.

A genus of some 10 species of which Z. elegans is our popular garden Zinnia. These are tender annuals and they may be started early indoors where they can be transplanted to flats and set out as soon as frost danger is passed. A little pinching back will produce more bushy plants; set out 1½-2 feet apart for the large type. They are especially good in the border, in bedding and for stiking effect in mass plantings, and if solid colors used they will be much more effective.

DAHLIA-FLOWERED TYPE: The plants are 2½-3 feet tall with large Dahlia-like blooms; especially good for bedding.

—Canary Bird. Rich canary yellow.....	ZIN-1C. 15¢
—Crimson Monarch. Large deep crimson.....	ZIN-1C. 15¢
—Dream. Most unusual rosy lavender.....	ZIN-1D. 15¢
—Exquisite. Light rose with a deep rose center.....	ZIN-1E. 15¢
—Illumination. Deep rose self; fine.....	ZIN-1N. 15¢
—Golden Dawn. Rich golden yellow.....	ZIN-1GD. 15¢
—Golden State. Beautiful golden yellow.....	ZIN-1GS. 15¢
—Luminosa. Large luminous bright pink.....	ZIN-1L. 15¢
—Meteor. Rich red; darkest of the reds.....	ZIN-1M. 15¢
—Polar Bear. Large creamy white.....	ZIN-1W. 15¢
—Royal Purple. Best in rich purple.....	ZIN-1RP. 15¢
—Will Rogers. Lovely brilliant scarlet-red.....	ZIN-1WR. 15¢
—Dahlia-flowered Blend. A rich blend of the above varieties.....	ZIN-1X. 15¢

PRICES: Ounce, 70¢; ¼ lb. \$2.25; 1 lb. \$6.00, prepaid.

GIANTS OF CALIFORNIA TYPE: The plants are 3-4 feet tall with large flat flowers on long stems and especially recommended for cutflowers; they are fine in beds, too.

—Brightness. Bright pink.....	ZIN-2B. 15¢
—Cherry Queen. Brilliant cherry rose.....	ZIN-2CH. 15¢
—Crimson Queen. Deep crimson.....	ZIN-2CQ. 15¢
—Enchantress. Pretty light rose with deeper center.....	ZIN-2E. 15¢
—Golden Queen. Golden yellow.....	ZIN-2GQ. 15¢
—Grenadier. A bright dark red.....	ZIN-2G. 15¢
—Lavender Queen. Deep rosy lavender.....	ZIN-2L. 15¢
—Miss Willmott. Large soft rich pink.....	ZIN-2M. 15¢
—Orange Queen. Deep golden orange.....	ZIN-2R. 15¢
—Purity. Best white in any Zinnia.....	ZIN-2W. 15¢
—Rose Queen. Striking deep rose.....	ZIN-2Z. 15¢
—Scarlet Queen. Glowing deep scarlet.....	ZIN-2S. 15¢
—Giants of California Blend. A real blend of the above.....	ZIN-2X. 15¢

PRICES: Ounce, 70¢; ¼ lb. \$2.25; 1 lb. \$6.00, prepaid.

FANTASY TYPE: Petals are long, curved and pointed, resembling those of the night flowering Cactus; 4 inches across and 2 inches deep. This strain includes Star Dust and many other varieties; plants 2½-3 feet tall.

—Gold Dust. Pretty golden orange.....	ZIN-3G. 15¢
—Melody. Pretty orchid lavender.....	ZIN-3M. 15¢
—Orange Lady. Bright deep orange.....	ZIN-3L. 15¢
—Pink Frills. Soft flesh pink.....	ZIN-3F. 15¢
—Rosalie. An intense rose color.....	ZIN-3R. 15¢
—Star Dust. Beautiful canary yellow.....	ZIN-3SD. 15¢
—White Light. Best pure white.....	ZIN-3WL. 15¢
—Wildfire. Dazzling scarlet.....	ZIN-3WF. 15¢
—Fantasy Blend. Carefully made blend of above varieties.....	ZIN-3X. 15¢

HARMONY TYPE, SCABIOUS FLOWERED: Plants are 2½-3 feet tall, bearing numerous medium sized flowers resembling annual Scabiosa or harmony Marigolds. This improved strain has long stems and is excellent for cut flowers.

—Finest Mixed. Bright shades.....	Oz. 75¢; ¼ lb. \$2.25.....	ZIN-4X. 15¢
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GAILLARDIA FLOWERED TYPE: Navajo Blanket Flowered. Flowers resemble Picta Double Gaillardia, in both form and coloring; brightly colored and perfect little fls.

—Finest Mixed. An All American winner.....	ZIN-5X. 15¢
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PUMILA TYPE: Dwarf double or Cut-and-Come-Again. In best pastel shades. The flowers are 2½-3 inches across, round in shape and good length stems for cutting. Sow in rich sandy loam; bloom in 50 days.

—Canary Yellow.	ZIN-6CY. 15¢
—Crimson.	ZIN-6C. 15¢
—Golden Orange.	ZIN-6GR. 15¢
—Pinkie. Pretty rose pink.....	ZIN-6P. 15¢
—Salmon Rose	ZIN-6SR. 15¢
—Scarlet.	ZIN-6S. 15¢
—Snowball. Pure white	ZIN-6W. 15¢
—Spun Gold. Butter yellow.....	ZIN-6SG. 15¢
—Sunshine Tints. Rich pastels.....	BIN-6ST. 15¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

A Canadian Letter

Mrs. A. M. Mac Pherson of Winnipeg writes an interesting letter about her flower growing, deer and other problems in her section of the world. Following are some special remarks:

In reading your magazine, I noticed you mentioned Alaska Cotton. I visited Churchill three years ago and I was so intrigued by it. I brot home some plants; they are alive and seem to be in good condition, however, they are not growing like they do up North. The one I planted in the home garden has rich sweet soil, while the one at the summer home at Hawk Lake, the soil is acid and sandy or gravel; I cannot understand what sort of soil suits it best.

At Churchill there is not a tree for hundreds of miles and the soil, what there is, must have a salt content, because the Arctic ocean beats against the rocks and it must reach the plants. Its a very beautiful vine and crawls over the boulders and each little leaf is rolled up and a beautiful shade of red, when this unfolds it is a glossy green with red veins.

The seed seem to be attached to a bit of white fluff-like cotton batting; I imagine a soil test would tell the secret.

No doubt but you will think I am a terrible person offering suggestions, however, I hope you will not be offended when I suggest something to improve your magazine; rest assured it won't be a request to publish reports on all the garden shows, neither will it be pages on flower arrangements but I think it would be very helpful for a question and answer column, for example.

How does one raise the Bell Heather?

Editor's remarks: Your letter is especially of interest because you touch on many points I have been trying to get across to our readers besides there are some that is of special personal interest.

First, I want to thank you for your remarks on the Arctic Cotton. Why can't we get more readers to write about different flowers, like you have done? You could have included a little personal mention on your trips and about other items of interest on flowers you notice along the way; so many things can be seen about a flower when it is in its native territory, such things as shade, sun, protection of bushes, kind of soil and many many other such indications as to its requirements. It is also of interest to note the range of growth type as well as to flower form and the colors.

Your remarks about flower shows, etc., are also of interest because we, too, feel that the reports in themselves are not very interesting to the average reader and we have yet to receive a report from a show that gives any information about a winning flower, other than who won it. We do not mean that flower shows are not a good thing, for they are, but unless some especially good new plant is shown, there is little of interest other than local.

We wish more readers would write on flowers of which they have an opportunity to observe, and especially items on their uses and cultural requirements; too many just "describe" the flower.

About a "Question and Answer" column. We would be glad to do this, but to tell you the truth, there are very few questions asked! Probably our readers are better posted, and we do feel that this is true because our publication does cater more to the serious minded flower grower, rather than to the less posted growers. I am afraid that many of the "questions" in these columns are written at the same time as the "answer". However,

ZINNIA - ENDING LIST AGAIN

—Finest Mixed.....Oz. 70¢; ¼ lb. \$1.70; Lb. \$5.50, prepaid..... ZIN-6X. 15¢

PEPPERMINT STICK: A NEW medium sized Pumila-type-flower Zinnia. Flower petals are striped in various color combinations such as red and white, red and yellow, purple and white, carmine and white, orange and yellow; about 70% striped flowers.
—Finest Mixed..... ZIN-7X. 15¢

SUPER GIANTS: An extremely large flowered type.

—Floradale Scarlet. Uniform scarlet, cactus type blooms; slightly smaller than Dahlia-flowered; 2-2½ feet tall..... ZIN-3F. 25¢

—Luther Burbank. In interesting pastel colors..... ZIN-8LB. 15¢

—Super Fantasy, David Burpee. Mixed colors..... ZIN-8B. 15¢

—Finest Mixed. All super giants mixed..... ZIN-8X. 15¢

EARLY WONDER TYPE: Earliest of all Zinnias, for short season locations and autumn planting. Plants 18-24 inches tall, basal branching, many 3-4 inch flowers on long wiry stems having no laterals and almost no leaves.

—Fandango. Salmon cerise-pink..... ZIN-9F. 25¢

—Fiesta. The darkest red..... ZIN-9E. 25¢

—Gypsy. Shades of deep orange..... ZIN-9G. 25¢

—Padre. Bright scarlet..... ZIN-9P. 25¢

—Rose Pink..... ZIN-9RP. 25¢

—Blend. Above varieties mixed..... ZIN-9X. 20¢

LILLIPUT or POM POM TYPE: The Lilliputs are among the most popular Zinnias for cut flower use. Flowers are small, compact, symmetrical and on strong plants, 1½-2 feet tall.

—Black Ruby. A showy maroon..... ZIN-10B. 15¢

—Canary Gem. Clear canary yellow..... ZIN-10CG. 15¢

—Crimson Gem. Best crimson..... ZIN-10CR. 15¢

—Dainty Gem. A dainty bicolor rose..... ZIN-10DG. 15¢

—Golden Gem. Pretty golden orange..... ZIN-10GG. 15¢

—Lilac Gem. Best clear lilac..... ZIN-10LG. 15¢

—Pink Gem. Pure deep pink..... ZIN-10PG. 15¢

—Purple Gem. Best in purple..... ZIN-10PR. 15¢

—Salmon Gem. Beautiful salmon rose..... ZIN-10SM. 15¢

—Scarlet Gem. Brilliant scarlet..... ZIN-10SG. 15¢

—White Gem. Best pure white..... ZIN-10W. 15¢

—Pastel Blend. Only delicate shades..... ZIN-10PX. 15¢

—Lilliput Blend. From named varieties..... ZIN-10X. 15¢

PRICES: Above varieties, Oz. 70¢; ¼ Lb. \$1.90; Lb. \$6.00, prepaid.

CUPID ZINNIAS: Dwarf, compact little plants bearing quantities of button flowers smaller than the Lilliput type. For edging and pots.

—Goblin. Burnt orange, an unusual color..... ZIN-11G. 15¢

—Pixie. Clear canary yellow..... ZIN-11P. 15¢

—Snowdrop. Pure white..... ZIN-11W. 15¢

—Tiny Tim. Deep scarlet..... ZIN-11T. 15¢

—Cupid Blend. Blend of above varieties..... ZIN-11X. 15¢

PRICES: Oz. 70¢; ½ Lb. \$1.90; Lb. \$6.00, prepaid.

TOM THUMB ZINNIAS: Plants 6-8 inches, compact, covered with well formed flowers

of the Lilliput type. Some taller plants will occur and these are easily distinguished and rogued out. A very satisfactory little Zinnia for borders and pot culture.

—Tom Thumb Blend. Nice range of pastel colors..... ZIN-12X. 15¢

—gracillima. Miniature deep scarlet fls; pl 1½-2 ft..... ZIN-13G. 15¢

—linearis. Single orange striped petals; lasting well when cut; 8-10";..... ZIN-14. 15¢

—Haageana. Zinniettes. Small double fls, varied and variegated; in wide color combinations; nice for old fashioned gardens and miniature bouquets..... ZIN-15. 20¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

we do answer every question asked us and we are going to ask Will Ingwersen to say something on your question; he is an Englishman, you know, but ought to be better posted on Heather than we here in the U. S. A., where so little of this is grown.

Speaking of Churchill; I have always wanted to go there. The Arctic and the old fur trade in the far North has always been of great interest. There is a lake called Oxford lake, some 90 miles north-east from the northern end of Lake Winnipeg, that I have always wanted to visit, for a vacation, but never have been able "to get away". And every time I read a letter from some one in that section, I immediately get started to make the trip; recently we had a subscription addressed c/o the Hudson's Bay House in Winnipeg, which really had me ready to go but then winter is coming on so it will be next year!

Our magazine is entirely different from any other publication. We are not trying to fill it up with display advertisements; its not a money making undertaking; its main object is to make it possible to distribute every known seed of value and to furnish all the information possible as to the uses and cult-

ural practices necessary. Much of this information has to come from readers. Just now we are changing the two column seed listing to one column, because it will allow more cultural information to be included as well as allowing the use of pictures. We hope our readers are going to like this change.

HELLEBORUS or CHRISTMAS ROSE

A great many seem to have trouble in growing Helleborus from seed. I suggest that you mix the seed in some moist sand or peat, place in a glass jar and hold in the refrigerator for 60 days, before starting the seed. It might be well to plant part of the seed in your usual way, as a check, and we shall appreciate reports on your operations.

No doubt, you will find Helleborus seed germinating better if the seed pan is kept in a dark place, rather than exposing it to the direct sun light.

To propagate by divisions, this is best done immediately after it blooms early in the spring or it can also be done in the autumn.

Do not disturb Helleborus too much; they are better when in partial shade.

HARDY VEGETABLES

Try planting the hardy vegetables, such as lettuce, carrot, beets, corn salad, parsley, in late October. Even in southern Michigan when they will germinate early in the spring as soon as the snow leaves the ground.

This will advance the harvest of these vegetables two or three weeks over spring planted seed.

One should get in a box full of good sifted loam soil, to which he has mixed in some course sand, that it will be handy early in the spring for transplanting or potting up plants, when it will not be possible to secure soil form out of doors.

Scabiosa caucasus, the perennial sort should be transplanted only in the spring.



Those wishing to give seeds for Christmas presents may either make up a special order or we will make one up of the new seeds that are continually coming in. If you have in mind a gardening friend very much interested in alpine or rock gardening, we can make some very attractive selections.

We will also include a copy of SAIER'S GARDEN MAGAZINE in which each kind included in the collection will be described and special culture directions given, so that the seeds will not only have value of so many packets, but the added interest of a complete introduction, so to speak. If these gift orders can be received by us early, we can have them all safely packed, and with your own gift card, also a postal card addressed to us acknowledging receipt, which we will immediately forward to you.

We suggest that the orders amount to either \$2.00 or \$3.00 for each gift; if you wish larger ones, they can be made up. The prices will be the same or less than the listed price. Besides we shall use kinds that will be scarce and highly desirable; for instance, we have word in today's mail that we shall have a limited lot of the rare Lily rubellum; neither seeds or bulbs of this beautiful Lily are often offered for sale and there are few stocks of it anywhere. It is one of the loveliest of all Lilies, with large shell-pink bells on stems of about 2 feet. We also have a fine crop of the rare Primula nutans.

If the gift is to go to the warmer sections of the country, then we can make up a collection of the Menninger trees and shrubs and many more rare tropical flowers; or if the gift is to be orchids, we can supply a collection of 5 or 10 packets for \$5.00.

Orchid seed should be ordered early in November so as to be sure of having the proper stocks, as these come in small lots to us.

PIONEER SEED CO. DIMONDALE MICH.

Pioneer Seeds

ABRONIA - ACHILLEA - ACTAEA

ABRONIA (ah-BROH-ni-ah)

Sand Verbena. Dwarf or trailing plants with fragrant white, yellow or pink flowers. Treat as annual, sowing seed early indoor for summer bloom; they do better when planted direct in the open ground and in the South seed can be sown in the fall. Remove husk before planting; often slow in germinating. Sunny, light soils best.

umbellata gr. fl., Rose A pretty little trailer; rose colored fls; HHA.....**ABRO-1** 15¢

ACACIA (ah-KAY-shah)

Shrubs and trees mostly from warm regions and they can be grown outdoors in Calif. 18-20 degrees F as low as they can stand. Soak seed in hot water leaving this to stand 10-40 hours. They grow fast and are ornamental.

Baileyana. Attractive silver-blue fol; bright golden yellow fls; HHS.....**ACAC-3** 20¢
Farnesiana. Very fragrant much branched Sh; 10 ft; Texas; HHS.....**ACAC-5** 25¢

ACANTHUS (ah-KAN-thus)

Bear's Breech. Perennials, thistle-like small shrubs; about 3 ft tall, fls white, rose or lilac on 18" spikes. They need heavy winter protection in the North; best in rich well drained soil. Seed sown in April will flower in Aug. THP.

—mollis v. latifolia. Broad glossy lvs; curious pale purple fls; HB.....**ACK-1** 20¢

ACHILLEA (ak-i-LEE-ah)

Milfoil or Yarrow. Hardy herbaceous perennials easily grown in any fair soil in full sun. Flowers in clusters of small heads, white, yellow and pink making good cut fls. Seed planted indoors in March will flower same year. They make good border plants.

—Bakeri. Large rich yellow; 3 ft; extra good; HP..... **ACH-3.** 20¢
—chryscoma. Dense woolly foliage; bright yellow fls; 9"; HP..... **ACH-8.** 20¢
—Clavennae. Finest RG species; silvery lvs; white daisy fls; 6"; HP..... **ACH-9.** 20¢
—filipendulina. Has showy round heads; yellow; robust; 5 ft; HP..... **ACH-10.** 20¢
—Cloth of Gold. A pretty golden flowered variety..... **ACH-10C.** 20¢
—milleforium. Round heads of white fls; 2 ft; HP..... **ACH-20.** 15¢
—Ptarmica v. The Pearl. Double pure white; excellent for cutting; HP..... **ACH-24.** 20¢
—Taygetea. A new variety; lemon colored heads; 2-3 ft; HP..... **ACH-33.** 20¢
—Achillea Blend. All species and varieties..... **ACH-X.** 15¢

ACONITUM (AK-oh-nyt-um)

Monkshood. Herbaceous perennials, seeds germinate slowly, sow out doors in May or June in shade or they can be started indoors earlier but plants do not like transplanting; thin to 18" apart; bone meal is good as a fertilizer.

—Wilsonii. Handsome spikes, large porcelain blue fls, late, 3 ft, HP..... **ACD-9W.** 25¢
—Barker's Variety. Pretty novelty in amethyst-blue, 6 ft, HP..... **ACD-9B.** 25¢
—palmatum. Blue fls 2½ in. across; Himalayan Mts; HP..... **ACD-16** 25¢
—napellus v. praecox. Blue fls; 4 ft; HP..... **ACD-16P(C).** 30¢
—lycoctonum. Wolfsbane. Hardy, yellow fls, 4 ft, moist soils, HP..... **ACD-14.** 25¢

ACROCLINIUM: see Helipterum.

ACROGEPHALUS

—sericus. Shrubby compact growth; soft pale blue fls; 1-2 ft; S. Rhodesia **ACRO-1.** 25¢

ACTAEA (ak-TEE-ah)

Baneberry, Cohosh. The showy terminal flowers develop into pretty white berries; they are useful in the rock garden, border or wild garden, doing best in shady places. Sow seed in late fall or spring; herbaceous perennials.

arguta. Very hardy, red berries, 2 ft, HP..... **ACTA-2.** 20¢

ACTINOMERIS (ak-ti-NOM-er-is)

Tall Sunflower-like native perennials for the hardy border or wild garden and resembling Helianthus and Verbesina. Grow like Sunflowers.

—alternifolia. Fls. yellow; 1-2" ac; rays; 8 ft; HP..... **ACTI-1.** 20¢

ADENOCARPUS (ad-ee-no-CAR-pus)

—decordicans...... **ADEK-1.** 30¢
Grown in the GH in N or in open in the S; low shrubs from S. EU and Asia Minor.

ADENOPHORA (ad-e-NOF-o-rah)

Lady Bells. Erect perennials with fleshy roots, flowers in shades of violet. They are good in border, being grown like Campanulas; disturb as little as possible.

confusa. Erect, fls deep blue, 1" long; 3 ft, HP..... **ADEN-2.** 20¢
—Potaninii. Bell-shaped fls, in panicles, violet; 3 ft; HP..... **ADEN-20.** 20¢

ADONIS (ah-DOH-nis)

Hardy herbaceous annuals and perennials; some make good RG plant and grow well in both sun or shade; fls solitary terminal, crimson or scarlet with a dark colored base. Sow seed of all kinds either in the spring or fall; they are easily grown.

aestivallis. Summer Adonis. Scarlet flowers in June-July, 1½ ft; HP..... **ADON-1.** 15¢

AETHIONEMA. (eeth-ee-oh-NEE-muh) STONE CRESS. Cruciferae.

Annuals, biennials and perennials allied to Eberis and hardy up to Michigan. They are dwarf plants with flowers in terminal racemes and grown in the rockery or border, flowering in May and June; a light sandy soil in full sun is ideal.

—grandiflorum. Pink or rose fls; 1½ ft; HP..... **AETH-9(C).** 30¢
—schistosum. Pink or rose fls; Asia Minor; HHP..... **AETH-21(C).** 30¢

AGAPANTHUS (ag-ah-PANTH-us) Lily-of-the-Nile

Blue Lily of the Nile. Beautiful So. African bulbous plant, easily grown. Not hardy and in the North the bulb must be stored indoors during winter. They make ideal tub plants and last for years.

longispaihus. A new sp., fls on 4 ft stems; free fl; compact..... **AGAP-5.** 25¢
orientalis. Large heads blue fls; 4 ft; S. Cal; HHP..... **AGAP-2** 20¢
—alba. White flowered variety..... **AGAP-2W.** 20¢
—Agapanthus Blend. All species listed..... **AGAP-X.** 20¢
—africanus, Mixed. Lily of the Nile..... 3 ft, mixed varieties; TP..... **AGAP-1X.** 30¢

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

AGERATUM - ALSTOEMERIA

AGERATUM (ager-A-tum)

Herbaceous annuals having tassel-like clustered heads; blue or white; they are easily grown, are tender in the N and must not be set outdoors till all frost danger is passed. They are useful as edging, in the front border, in porch or hanging baskets; popular.

Houstonium: This is incorrectly listed as *A. mexicanum*. The commonly grown Ageratums all come under this species.

- Blue Ball. Deep blue ball-shape plant; compact; 9"; HHA..... **AGER-3B** 15¢
- Blue Bedder. Lavender-blue; compact, 4"; pretty for beds; HHA..... **AGER-3C** 15¢
- Blue Cap. Rich blue, dome-shape plant; RG; extra nice; HHA..... **AGER-3D** 20¢
- Blue Star. Deep blue, 6", very nice for edging; HHA..... **AGER-3E** 15¢
- Dwarf Imperial, White. Popular bedding sort; strong growth..... **AGER-3RW** 15¢
- Blue..... **AGER-3RB** 15¢
- Fairy Pink. Softest salmon-pink; edging or pots, 6"; HA..... **AGER-3Y** 20¢
- King of the Blues. Low compact plants; deep blue; HHA..... **AGER-3F** 15¢
- Little Dorrit. Pretty deep blue; fine for edging and pots; HHA..... **AGER-3G** 15¢
- White. A pure white strain; fine bedding, boxes and border..... **AGER-3GW** 15¢
- Midge Blue. A 2-3 in. plant; compact; fine for edging; HHA..... **AGER-3H** 15¢
- Purple Perfection. Deepest blue, 9"; fine for boxes or bedding;..... **AGER-3J** 15¢
- Silver Star. Pretty dwarf white, 6 inches, HHA..... **AGER-3K** 20¢
- Swanley Blue. Azure-blue; thickly bunched, 8"; HHA..... **AGER-3L** 15¢
- White Queen. Pure white; 8"; dandy; HHA..... **AGER-3M** 15¢
- White Beauty. Considered the best white; 7 inches; HHA..... **AGER-3P** 15¢
- Zuriblauf. Pretty dwarf blue novelty from Switzerland; HHA..... **AGER-3Z** 15¢
- Mixed. Blend of all the above garden varieties..... **AGER-X** 10¢

AGRIMONIA (ag-rim-MOH-nee-ah) Agrimony

Erect perennial plants with small yellow fls in racemes followed by burr fruits; shade.

- odorata. Yellow; 3 feet; Europe; HP..... **AGRI-2** 20¢

AGROSTEMMA: see *Lychinis*.

AGROSTIS (ah-GROS-tis)

A group of tufted annual and perennial ornamental grasses.

- nebulosa*. Cloud Grass. Dwarf and neat; plant indoors early; 1 ft. HA..... **AGRO-5** 20¢

AJUGA. (aj-YEW-guh) BUGLEWEED. Labiatae.

Herbaceous annuals and perennials for the rockery or border; flowers in whorls in terminal spikes, blue, white or rose. They are easily grown.

- genevensis*. Blue; 10 in. tall; HP..... **AJUG-4(C)** 30¢

ALLAMANDA (al-ah-MAM-dah)

Shrubs and climbers native of Brazil. Easily grown in the greenhouse in N. In the South they thrive in the open. Showy purple or yellow flowers.

- cathartica*. Pretty vine; golden yellow fls 3" across; HHA..... **ALLA-1** 20¢

ALLIUM (AL-i-um)

Flowering Onion. Nearly all those listed here are hardy perennials. They are attractive plants in the border, some in the rock garden. Sow seeds as for perennials, usually in early spring. Rich, sandy soils best; full sun.

- albopilosum*. Lilac in umbels 8 inches across; 3 ft; dandy, HP..... **ALUM-2** 25¢
- ammophilum*. Golden yellow floweres; Europe; HP..... **ALUM-4** 30¢
- cernuum*. Nodding buds, erect fls; lavender to white, May; 1 ft; HP..... **ALUM-21** 20¢
- falcifolium*. An extra good RG species; 4"; deep rose; HP..... **ALUM-23** 25¢
- Gayeri*. Very pretty 14 inch plant; rose-pink fls; HP..... **ALUM-37** 25¢
- giganteum*. Bright lilac; Cent. Asia; 4ft; HP..... **ALUM-38(C)** 30¢
- karataviense*. Whitish fls with purple mid-rib; 1 ft; HP..... **ALUM-44** 25¢
- neopolitanum*. Large 3 inch white flowers; 1 ft; S EU; HP..... **ALUM-58** 25¢
- nigrum*. (A. speciosum) Violet fls; 2 ft; HP..... **ALUM-60** 30¢
- oreophilum*. Purple in many flowered umbels; Caucasus; HP..... **ALUM-67** 40¢
- peninsulare*. Rose-purple fls in loose umbels; 1 ft; HP..... **ALUM-72** 25¢
- praecox*. White fls petals, bright purple mid-vein; 1 ft; HP..... **ALUM-74** 15¢
- pulchellum*..... **ALUM-75** 40¢
- pyrenaicum*. White flowers with a green mid-rib; 3 ft; HP..... **ALUM-78** 20¢
- roseum*. Rose fls in loose umbels; 18"; HP..... **ALUM-81** 20¢
- rubrum*. Flowers replaced by reddish bulbels; 1 ft; Rocky Mts; HP..... **ALUM-83** 30¢
- Schoenopaeum v. sibiricum*. CHIVES. Rich purple fls; 1 ft; HP..... **ALUM-87S** 20¢
- senescens*. (A. montanum) Lilac in many fl'd umbels; 2 ft Eu; HP..... **ALUM-90** 25¢
- sphaerocephalum*. Tall pretty globular deep red heads; HP..... **ALUM-93(W)** 30¢
- stipitatum*..... **ALUM-96** 30¢
- tanguticum*. Bluish lilac with darker midrib, in dense umbels; HP..... **ALUM-99** 30¢
- tibeticum*. Deep blue flowers; 6"; Tibet; HP..... **ALUM-102** 35¢
- triquetrum*. Large white fls in loose umbels; 18"; HP..... **ALUM-104** 25¢
- tuberosum*. Leaves not hollow; July-Sept; 18"; HP..... **ALUM-105** 20¢
- unifolium*. Pink Allium. Calif; 15"; bright rosette; HHP..... **ALUM-106** 20¢
- Allium Blend. A valuable collection of Allium species..... **ALUM-X** 20¢

ALOE (AL-oh)

Perennial succulent plants native of the Cape. They make ornamental pot plants in the North. Grow in sandy soil with a little peat and rotted manure and small chunks of old mortar or lime; keep on dry side.

- excelsia*. From So. Rhodesia..... **ALOE-24** 20¢

ALONSOA (al-on-SOH-ah)

Mask Flower. Easily grown in a warm locaion. Sow seed indoors in spring and set plants out after frost danger; for growing indoors in winter, sow in summer and set plants indoors early in the fall.

- Warscewiczii*. Cinnabar or scarlet-red; 3 ft; Peru; grow as an annual..... **ALON-7** 20¢
- Alonsoa Blend. All the above kinds..... **ALON-X** 15¢

ALSTROEMERIA (al-stre-MEE-ri-ah)

So. American greenhouse plants grown from tuberous roots that are treated as bulbs. Rich soil and a sunny position needed. Seed can be planted in pots, August or later, which bloom the following summer.

- aurantiaca*. Orange spotted red, free, very hardy, 3 ft; HP..... **ALST-1** 20¢
- augustifolia*. Pink, orange or flame, 3 ft; HP..... **ALST-1A** 20¢
- Ligtu*. Pink, red and yellow fls; 2 ft; HP..... **ALST-5** 20¢
- hybrids*. Peruvian Lily. Pink, red or yellow; 2-3 ft; HHP..... **ALST-5H** 20¢
- Pelegrina*. Lily of the Incas. Pink spotted purple; 1 ft; HP..... **ALST-6** 25¢
- alba*. Pure white form; very nice; 1 ft; HP..... **ALST-6W** 25¢
- Blend. All kinds mixed..... **ALST-X** 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Rock Garden Species of Penstemons

The miniature Penstemons, both shrubby and herbaceous, have a charm and variety that is hardly duplicated in any other group of flowers. Many of these beautiful little plants, too, have not been available to the gardener before and we take pride in being the foremost introducer of this genus.

The species considered here are the dwarfs, most of which have quite ornamental foliage and that make attractive clumps or mats.

P. linarioides coloradoensis has silvery gray leaves that remain bright and fresh all summer and usually all winter, too. If planted in the rocky part of the garden the branches tumble over the rocks in a pleasing manner.

P. thompsonae, a Sedum-like shrublet with tiny gray spatulate leaves, almost white in appearance. It is not over 1 inch high and makes little mats to 6 inches across. The flowers are violet and produced on tiny erect spikelets. Hardy and stands the sun and drought (deserts of north central Nevada):

P. acaulis is a challenge to the good flower grower. Its requirements are for desert treatment. It resembles a tiny Phlox, with filiform leaves, growing in small clusters.

The tufts grow as much as 10 inches across but usually 2-4 inches. Its little blue flowers sit on top of the pan cake clumps of foliage; native of the foothills of the Uinta Mountain range of Utah.

P. exilifolius has white erect flowers on slender airy spikes. It forms a neat light green mound with short grassy leaves very similar to the cushion *Dianthus*.

P. paysoniorum, a dwarf only 6 inches high and found in the dry sandy washes on the desert plains of Wyoming. The leaves are dark green, shiny and in rosettes close to the ground. It is floriferous; medium blue in color and small; found on desert plains of Wyoming.

P. halli, another dwarf *Glabri*, with immense flowers in proportion to the size of the plant. It makes attractive rosettes of shiny dark green leaves above which forms erect 6 inch stems that are covered with its rich deep red purple flowers: Try it in a well drained place protected from the sun by a rock; found high on mountain peaks in the Colorado Mountains.

P. virens, a beautiful and dainty plant that grows in cut banks and gravelly hill-sides. It makes a thick mound with bright green lanceolate leaves. The flowers are a cloud of blue, on stems 6-8 inches high, giving the bloom an airy effect; the flowers are small but numerous. Found in Colorado and southwest Wyoming.

P. Tolmiei is a charming plant, a mat former, the root stocks rooting as they extend along the ground. The leaves are a deep green, lanceolate shaped and numerous: The flower stems are 8-12 inches high, topped with small, compact clusters of tiny red-purple flowers; they are found in the Cascade mountains of Washington.

P. heterophyllus, subspecies, *purdyi*, is a dwarf decumbent form and does well for covering dry banks but it is tender in the northern section of the country. It makes a very attractive low mound with olive-green leaves with a touch of bronze, making it very ornamental. The flowers are blue, purple or rose or in combinations of these, making the effect spectacular.

Continued on Page 159

Bromeliads

By Victoria Padilla

LONG TIME -- WILL SEE

For a plant that stays a long time in bloom one will have to go far to find one that surpasses the Aechmea. Not only for weeks is it an arresting sight, but for months its colorful spike attracts attention of all who see it. The writer has one species, Aechmea fulgens, discolor, that has maintained a perfect spike of brilliant red for the past six months. and her Aechmea fasciata, a favorite in the old world because of its lovely flower head of soft pink and blue, will last equally as long. Because of their long-lasting qualities these plants are popular in Europe as cut ion, however, they may be grown successfully are comparatively unknown in this country.

The Aechmea is related to the Pineapple in that it is one of the members of the Bromeliad family. Native to Brazil where they grow on trees alongside orchids, they are almost entirely epiphytic. Under cultivation the botanic gardens or growers here; second-in pots, baskets, on moss walls, attached to logs, and in the open ground. They prefer a sheltered location in part shade, a light porous soil of leaf mould and sand, and a moderate temperature that will not fall much below 35 degrees Far. They like plenty of water during the summer but like to be kept dry during the winter. They are comparatively free of disease and pests, although snails love to live in their center cups. They make ideal plants, for they will thrive where it is quite dark; and their handsome inflorescence adds much to indoor decor.

Aechmeas consist of a leaf cluster or rosette, out of the heart of which comes the bract and flower head. The plants vary in size and coloring. The flower may be brilliant red and blue, orange and purple, pink and blue, yellow and black; whereas the leaves may be a soft glossy maroon, green with yellow stripes, gray banded with white, greenish gray and purple, or just plain green. No matter what color combination, all are highly decorative and very fascinating.

Some plants bloom faithfully once a year, while some bloom once every two years. After the plant has flowered, it sends out offshoots, and after a time the original plant will die. Propagation of Aechmeas is chiefly by their offshoots, which are best cut off the mother plant when they are about 5 or 6 inches high. They may then be planted in a small pot and very shortly will form their own root system and grow rapidly. For the average person, raising Aechmeas by seed is not to be recommended. In the first place, seeds are very scarce, and the only source of supply are growers in Europe and a few of in winter, generally around the holiday season the seeds are not too easy to germinate; and lastly, the plants take a long time -- a period of years which varies with each variety -- to flower from seed.

There are many delightful varieties which the amateur will enjoy owning and which are easy to flower. Aechmea fasciata, the "Urn Plant," mentioned above is highly prized. Aechmea Foster's Favorite is highly desirable because of its lovely, smooth lacquered wine-red leaves. Its drooping berry-like flower stalk with dark blue flowers bloom stunning yellow flower head add much where son. Aechmea caudata variegated is a favorite in Southern California, for it is easily grown out of doors. It is a large plant and

ORCHID SEED YEAR AROUND

We can supply the following ORCHIDS all during the year. In some cases it may be 30 days in making delivery but usually the seed will be in stock.

Orchid seed is as fine as dust and is not easy to grow; we will try to have some articles on them in future issues.

The listing will be corrected later to the latest botanical classifications; in many cases of foreign classifications, the old botanical names are still used.

PRICE: \$1.00 per Pkt; 5 for \$4.00.

AERIDES longicormu.

- odoratum.
- racemeformis.
- vandarum.

ARUNDINA bambusaefolia.

BULBOPHYLLUM Leopardium.

CALANTHE alismaefolia.

- biloba.
- brevicornu.
- herbacia.
- puberula.
- densiflora.

CIRRHOPEALLUM gutulatum.

COELOGYNE cristata.

- occulata.
- flacida.
- Fescenscens.
- corymbosa.
- elata.
- ochracea.
- ovalis.

CYMBIDIUM aloifolium.

- Cochleare.
- Devonianum.
- elegans.
- ensifolium.
- giganteum.
- longifolium.
- Whiteas.
- pendulum.
- grandiflorum.
- gammeanum.
- eburneum.
- Mastersii.
- Lowianum.
- irachyanum.
- Simonsianum.
- Zaleskianum.
- lancifolium.
- cyprefolium.

CYPREDIUM insigne.

- venestum.
- Fairreanum.
- hirsutissimum.
- insigne Harefield Hall.
- insigne Sanderae.
- spicerianaum.

DENDROBIUM amoenum.

- chrysanthum.
- aureum.
- amplum.
- densiflorum.
- Gibsonii.
- fimbriatum.
- rotundatum.
- longicornu.
- peirardie.
- Hookerianum.

- nobile.
- moschatum.
- moschatum v. Cupreum.
- transparens.
- chrysotoxum.
- crepidatum.
- Farmerii.
- primulinum.
- Wardianum.
- devonianum.
- draconis.
- falconerii.
- infundibullum.
- formosum.
- formosum giganteum.
- lituiflorum.
- Jamesianum.
- ochreateum.
- Jenkinsii.
- nobilescens.
- thyrsiflorum.
- nobile alba.....
- nobile Sanderianum.
- nobile v. Amessiae.
- nobile v. nobilius.
- nobile v. Ballianum.
- nobile v. Wallichianum.
- peirardie v. Lantiniifolium.
- transparens v. album.
- densiflorum aureo flavum.
- densiflorum v. albiflorum.

Pkt. \$2.00

Pkt. \$3.00

ERIA convallariodes.

- coronaria.

PHAIUS maculatus.

- mishmehsis.
- wallichii.
- grandifolius.
- wallichii v. Assamica.

PLEIONE Hookeriana.

- humilis.
- maculata.
- maculata praecox.

RENANTHERA imschootiana.

- coccinea.

SACCOLABIUM Blumei.

- ampulaceum.

RHYNOSTYLIS refusa.

THUNIA aba.

- Marshalliana.
- venosa.

VANDA coerulea, Dark Blue.

- Light Blue.
- cristata.
- pumila.
- alpina.
- Teres.
- teres alba.
- Roxburghii.
- undulata.
- Clarkei.
- cathcartii.
- Agnes x Joaquim.
- teres giganteum.
- teres Audersonii.
- Parishii.
- v. Mariottiana.
- Denisoniana.

Pkt. \$3.00

The above list will not appear for another six months and it can be used for the entire year. We will add descriptive matter in the next listing.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

its striped green and white leaves and its bearing large quantities of powder-puff-like tropical effect is desired.

Aechmea Weibachii should be in everyone's collection. Its leaves are of a bronze-salmon and green, and its long flower spike ends in a stunning cluster of red berries topped by lavender petals. It has lived through freezing weather for the writer, which is unusual for a plant that is native to the jungles.

Rudis: ROO-diss; wild; not cultivated.

GEORGE RUSSELL PASSES AWAY

Continued from Page 145

as we have planned; in the meantime, we would be pleased to have letters from any of our readers who have come in contact with Mr. Russel, their remarks would certainly be interesting to add to what we already have.

Our subscription price will be changed to \$2.50 very shortly. We had hopes of keeping the present price till the first of the year:

Sundial Mottoes

By Ann Hanley

While the astrolabe, superseded by the sextant, is rarely seen to-day except as a curio, the sundial like the weathervane still has a semblance of use. "Timepiece of the shadows" as it has been called it makes a valuable addition to a garden setting, where its white pillar balances the bird bath as a useful ornament. Through the ages it has followed the trend of agriculture from the Greek to Georgian which may still be copied.

What a sundial needs is a good vista with greensward in front, a firm base, a well cast an interesting motto. The dial may be purchased ready to mount on the pedestal, the tops being cast in one piece. While the correct setting of the plate is most easily managed by taking the noon reading of the sun on one of the four times a year where sun time and clock time agree, these dates differ according to Greenwich or Washington time, so it is well to consult a meteorologist as to exact date for the place. The local weather man will no doubt set you right.

Mottoes are not so often used to-day as they were when sundialing (before clocks were introduced) was a special brand of education, about which text books were written. But mottoes always add interest and many of them have historical value. French mottoes for brevity as: L'Avance - I move forward; Allez Vous - Pass On. Latin mottoes were always popular as Carpe Diem Seize the Moment; Tarde sed Certe - Slow but Sure. From Petrarch comes: Volano L'or, I Giorni, Gl'anni E I Mesi, - Hours, Days, Months, Years, all fly.

English mottoes are numerous and interesting. Harriet Martineau chose, Come Light Visit Me! Then there is: Old Father Time Stands Still for None, This moment here, the next He's gone.

Let Others tell of storms and showers,
I'll only count your sunny hours.

or

Noiseless falls the foot of Time,
Which only falls on flowers.

Several verses of Omar Khyyam would make suitable mottoes for sundials:

Lo! the Hunter of the East has caught
The Sultan's turret in a noose of light,

or:

The Bird of Time Has but a Little way
To fly - -And Lo! the Bird is on the wing:

Of facetious mottoes there are many, of which that of the Inns of Court, Inner Temple, London had an amusing story. When the artist went to arrange about the motto, the testy old gentleman in charge told him: "Begone about your business!" The benchers so enjoyed the joke that they chose this for their sundial motto.

Charles Lamb who loved sundials thought that Adam could scarcely have missed having one. The oldest on record is an Egyptian one once in a Berlin museum: The translators of the Bible credited Ahaz (Issiah xxxviii:8) with one: "Behold I will bring again the shadow of the degrees, which is gone down in the sundial of Ahaz, ten degrees backward."

Shakespeare has several suitable mottoes in his sonnets. Thou by the Dial's shady Stealth must Know,

Time's thievish Progress to Eternity.
(LXXVII) and in the same:
The Dial will show how thy precious minutes waste.

John Greenleaf Whittier once wrote a sundial motto:

"With warning hand I mark Time's rapid flight

From Life's glad morning to its solemn night:

Yet through the dear God's Love I also show

There's a light above me by the shade below."

Austin Dobson like so many English poets honoured the sundial:

'Tis an old sundial, dark with many a stain,

In summer crowned with drifting orchard bloom,

Tricked in the autumn with the yellow rain,

And while in winter like a marble tomb:

But round about its gray, time-eaten brown,

Lean letters speak, a worn and shattered row:

"I am a shade, a shadow; so are thou.

I mark the time; say gossip, doest thou so?"

CIVILIZATION!

Have you ever thought just what our civilization exactly is? Probably, I should say, what the results of our civilization are.

In reading books written a hundred years or more ago, one often comes across such remarks as, "when affairs of all kinds were more leisurely and easy-going than they are now". This was written a hundred years ago!

Today, with all our knowledge and modern machinery, a bushel of wheat never cost so much to produce or as much to buy, as it does today, right here in the U. S. A!

Rupicolus: roo-PIKK-ol-us; growing on cliffs

Patens: PAY-tenz; spreading.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 20¢ per line of seven words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

PLANTS FOR SALE

AFRICAN VIOLET LEAVES. 12 for \$1.00 named varieties, plants 3 to 6 in. tall 3 for \$1.00, my choice. Gypsy Series leaves 20¢ each 7 for \$1.00; plants 2 for \$1.00. Rose-onna leaves 3 for \$1.00; Please add 25¢ postage. Mrs. Sophia M. Baker, 2733 S. E. 35th Place, Portland, 2, Ore.

CUTTINGS: \$1.50 per dozen; house plants mixed or Begonias or Sweet Scented Geraniums, Mints, herbs, wild ferns; prepaid. Mrs. H. C. Sanborn, RFD 1, Thetford Center, Vt.

HAVE YOU PLANTS FOR SALE? Then list them in these columns, especially if you have something extra choice, the cost is very low and returns good; special rates on extended listings.

HELP WANTED

HELP WANTED. We have a good position open for a young woman who has had training in botany; should be able to type. Pioneer Seed Company, Dimondale, Mich.

SITUATION WANTED

SEEDS FOR SALE

HERB SEEDS AND PLANTS: We specialize in raising herb seeds and grow all popular and many rarer kinds. Also field-grown perennial herb plants. Our descriptive folder lists many varieties at reasonable prices. **PLANTATION GARDENS,** RFD 2 Box 193, Lynchburg, Virginia.

DODECATHEON CUSICKII. Fresh seed nowready, 50¢ per packet. Pioneer Seed Co., Dimondale, Mich.

DAYLILY SEEDS hand pollinated from choice hybrid reds, rose, pastels. Fresh seed (mixed only) 10 for 30¢; 40 for \$1.00. Ffoulkes, 610 Bryan, Jacksonville, 2, Fla.

RARE PLANTS. If you grow rare plants you will find these columns your best outlet. Try a small ad and see.

TREE AND SHRUB SEEDS: We carry in season over 800 tree and shrub seeds; if you need these seeds be sure you get our list. Pioneer Seed Co., Dimondale, Mich.

BEAUTIFUL INDIAN ORCHIDS Himalayan Flower Bulbs, Anemone, Sternbergia, Iris, Tulips, Unusual charming seeds. G. Ghose & Co. Townend, Darjeeling, India.

MAKE USE OF THE CLASSIFIED SECTION - IT'S YOURS

A NEW GENTIAN?

By Ann Hanley

Hybrids generally take a long time to get their characteristics settled. That was why it seemed perfectly safe to plant seed of *Gentian hanscombiensis*, for it has been established in English gardens a long time. The offspring of *G. septemfida* and *G. lagodechiana*, the catalogs described it as having a mid-blue flower with white dots.

Of two plants from one lot of seeds, I got anything else. They germinated quickly compared with *G. lagodechiana* which took three months the last lot I planted. The blossoms were eagerly watched for the second year. The leaves of one plant resembled *G. septemfida*, but those on the other were larger and of a waxy appearance. The blossoms were solitary, terminal, but the color was the blue of *Jasione perennis*, the second year there were several terminal, very like the *sempemfida* parent. But the blossoms were quite unlike either parent. The five petals recurved, making a lovely tube, without spots. Unlike most *Gentians* these did not close at night or on dark days, but remained open until they faded. The plants were very healthy and seeded freely.

The other seedling also showed marked variation. Its flowers were petalled and in color a little lighter than the former. But the curious thing about them was that between each petal was a short petal-like point of the same color not more than a third the length of the petals. This plant seeded freely and in other respects behaved like other *Gentians*.

Now, I am wondering if I have an entirely new *Gentian* or if someone made a mistake in gathering the seed. This is something that has come my way several times since I have been gardening. Once I sowed what was labelled, *G. lagodechiana* only to get quantities of *G. scabra* Buergeri, which I did not need. On another occasion I ordered *Ramonda* seed from a very reputable seed house. The seed came readily and were treated to *Ramonda* care, which probably delayed their flowering until the third year, when they proved to be beautiful white *Campanulas* of a variety I had never seen. The flowers formed a complete triangle of branches, quite short and covered with large white bells.

ROCK GARDEN PENSTEMONS

Continued from Page 155

P. diphyllus s.s. *triphylus*, a sub-shrubby plant with stems that are of a trailing effect, making them attractive for the rock garden. It is one of the few *Penstemons* with deeply cleft or pinnately toothed leaves. They are a dull green and red-purple in the autumn. The flowers are borne in panicles and while the individual flower is small they are in great numbers. The petals are blue with magenta throats and really effective when combined with the leaf color. It is almost an everbloomer; found in western Montana.

P. loricifolius of which the above is a sub species is much alike in appearance, habit of growth and choice of position but this has pink or lavender flowers. The name means leaves like a larch and is found farther west in Woming.

P. harbouri is a true alpine and found in the rock screes above timber line. Clear lavender flowers on erect 6 inch stems with the foliage mat often prostrate. Found in the McClellan mountains in the Colorado Rockies.

GET EVERY ISSUE — \$2.00 PER YEAR

AMBERBOA - ANAGALIS

ALTHAEA (al-THEE-ah)

Hollyhock. Flowers in terminal erect racemes or spikes; easily grown in good loam. Mostly perennial; the biennials, of which the common Hollyhock is the principal one can be started in July for flowers the following summer.

ficifolia. Fig-leaf Hollyhock. Deep yellow fls; 6 ft; HP..... **ALTH-3** 20¢
—hybrids. Many collar combinations, 6 ft; HB..... **ALTH-3H** 20¢
rosea. The common Hollyhock, which see.

ALYSSUM (ah-LIS-um)

Magwort. Annuals and perennials, trailing to 1 ft in height, and all showy; the perennials bloom very early in the spring; the annuals during early summer

A. maritimum. Under this heading are listed all the common annual Sweet Alyssum. Botanically, they belong under *Lobularia maritima*. They are all hardy annuals, doing best when started early. They are used in edging or bedding, in pots, baskets or boxes as well as in the rock garden. All low growing and very free flowering.

Carpet of Snow. Compact strain, pure white; 3"; HA..... **ALYS-15C** 15¢
Snow Cloth. Very dwarf, compact; snow white; 3"; HA..... **ALYS-15S** 15¢
Little Gem. Compact 6" plants, pure white; HA..... **ALYS-15G** 10¢
Lilac Queen. Deep violet, 6", very pretty; HA..... **ALYS-15Q** 15¢
Violet Queen. Uniformly deep violet, compact, fragrant, 6", HA..... **ALYS-15V** 15¢
Sweet Maritimum. Very fragrant; 1 ft, white; boxes or baskets; HA..... **ALYS-15M** 15¢
Mixed Annual Alyssum. All varieties..... **ALYS-15X** 10¢

—*arduini*...... **ALYS-6** 25¢
—*idaeum*. Silvery green foliage; fls whitish; Crete; HHP..... **ALY-12** 25¢
—*Markgraffii*. Bright yellow, dense panicles; 1 ft; Albania; HP..... **ALYS-17** 30¢
—*Molelendorffianum*. Yellow fls; fol silvery; Bosnia; 5"; HP..... **ALYS-19** 30¢
—*murale*...... **ALYS-21** 35¢
—*orientale*. Collected in Albania..... **ALYS-22** 30¢
—*spinosum*. White or pinkish; woody, 1 ft; S EU; HP..... **ALYS-31** 20¢
—*lutescens*. Yellow form of *Lobularia maritima*..... **ALYS-16** 25¢
montana. Trailing, deep yellow; 3"; RG; HP..... **ALYS-20** 20¢
saxatile v. *Gold Dust*. Spring flowering; 1'; golden yellow; HP..... **ALYS-26G** 15¢
—*compastum*. Compact masses, yellow, April-May, 1 ft; HP..... **ALYS-26C** 20¢
—*Silver Queen*. Primrose fls; fine for RG; 1 ft; HP..... **ALYS-26S** 20¢
—*sulphureum*. Pretty sulphur-ellow; 1 ft, HP..... **ALYS-26U** 20¢
Rock Garden Specie. Contains a collection for RG; extra choice; HP..... **ALYS-34X** 20¢

AMARYLLIS (am-ah-RIL-is)

One species, *A. Belladonna*, of which there are several varieties or forms. Just lately the botanical name has been changed to *Brunsvigia rosea*. The usual time for fresh seed is April to June and should be sown as fresh as possible.

—*Mammoth Red*. California grown..... **AMAL-1** 25¢
—*Mammoth Red and White*. Red flowers with some whites also..... **AMAL-1W** 25¢

AMARANTHUS (am-ah-RAN-thus)

Amaranth. Annuals native in mild climates and grown for their colored foliage and the heavy red flowers; they are easily grown and will produce better flowers if grown in poor soil; for that dry bank, these should be fine; full sun.

—*audatus*. Love-lies-bleeding. Long drooping red fls; 4 ft; TA..... **AMAR-1** 10¢
—*oeschberg*. Erect, dark red flowers; HA..... **AMAR-1B** 15¢
—*viridia*. Same but with white fls; HA..... **AMAR-1W** 15¢
—*nanus*. A dwarf form, HA..... **AMAR-1N** 15¢
hybridus hypochondriacus. Prince's Feather. Showy; red; 3 ft; HA..... **AMAR-2H** 20¢
—*splendens*. A rich red with brilliant red fol at top of plant..... **AMAR-4D** 15¢
—*salicifolius*. Fountain Plant. Slender leaves, 3 ft; HA..... **AMAR-4S** 15¢
—*tricolor*. Joseph's Coat. Erect; leaves blotched and colored; 3 ft TA..... **AMAR-4** 15¢
—*Molien Fire*. Maroon fol; each branch tipped crimson; 4 ft; TA..... **AMAR-4F** 15¢
—*Pigmy Torch*. Dark crimson; dwarf plants; 1 ft; TA..... **AMAR-4P** 15¢
—*Sunrise*. Bronze crimson and scarlet; 3 ft; TA..... **AMAR-4R** 15¢
Amaranthus Blend. All kinds mixed; HA..... **AMAR-X** 10¢

AMBERBOA (am-bur-BOH-ah)

Annuals with jaggedly cut or divided leaves and flower heads in purple, blue or pink resembling Bachelor Buttons. Easily grown from seed and should be planted where plants are to grow; half hardy annuals native of Spain and Morocco.

muricata. Easy; stars of pale purple with creamy centers; HHA..... **AMBR-2** 20¢

AMMOBIUM (a-MOH-bi-um)

Australian everlasting, perennial, with solitary heads of yellow fls surrounded by silvery-white bracts. Easy to grow, usually as an annual but can be planted in the fall. Flowers remain white if cut early.

AMPELOPSIS (am-pe-LOP-sis)

—*alatum*. Winged Everlasting. Foliage white-woolly, 3 ft, heads 2" ac..... **AMOB-1** 15¢
Tendrill-climbing deciduous shrubs belonging to the Grape Family. Grows well in any fair soil; some not hardy in the North.

quinquefolia. Virginia Creeper, American Ivy. (Parthenocissus)..... **AMPL-13** 20¢
Veitchii. Boston Ivy. (Parthenocissus)..... **AMPL-12** 20¢

AMSONIA (am-SOH-ne-ah)

Perennials 1-3 ft tall, having bluish flowers followed by rather attractive milkweed-like pods; border, easily grown.

Tabernaemontana. Star fls of soft blue; May-June; HHP..... **AMON-2** 15¢

ANACYCLUS (an-ass-SYE-klus)

A race of daisies from Med. regions related to *Pyrethrum*; a few species are very desirable dwarf perennials with finely cut foliage and large white or yellow daisy-like flowers with backs of the rays striped with brilliant red. Sunny, stoney positions best.

—*Anacyclu Blend*. All kinds mixed; HP..... **ANAC-X** 15¢

ANAGALLIS (an-ah-GAL-is) Pimpernel

Low growing annuals, biennals and perennials having pretty little star-like flowers in red, blue and white that grow out of the axils of the leaves on hair-like stems. Very free flowering; some especially nice for the rock garden. Best in a loose warm soil.

—*linifolia*. Mixed. Large flowered..... **ANAG-2X** 20¢
—*Scarlet*...... **ANAG-2S** 20¢

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

ANDROSACE - ANTENNARIA

ANAPHALIS (an-NAF-al-iss)

White woolly perennials for the rock garden or border; small white flowers and can be used as everlastings.

margaritacea. Pearl Everlasting. Fine for dry fls; white; 3 ft; HP **ANAP-1** 20¢
nubigena. Himalayan alpine for RG dwarf woolly; white fls; HP **ANAP-4** 25¢

ANCHUSA (an-KEU-suh)

Excellent perennials for the summer border in a sunny place; hardy, easily grown, flowering July-August or even later. Comes mainly in blue colors. Best in good soil with plenty of old manure. Be careful not to damage tap root when transplanting.

azurea, Dropmore Variety. Lovely bright blue fls; 4 ft; HP **ANCH-2D** 15¢
—Opal. Same as above but a lighter pretty blue; HP **ANCH-2P** 15¢
capensis, Blue Bird. Vivid indigo-blue, compact, 1½ ft, HA **ANCH-4B** 15¢
Anchora Blend. All kinds and varieties; HP **ANCH-X** 15¢

ANDROSACE (an-DROS-ah-see)

Rock Jasmine. True alpine annuals and perennials for the rock garden or low border. Many require special handling in the alpine or rock garden. Leaves usually tufted or in rosettes and often woolly. Flowers small in red, pink or lavender, usually borne in rather flattened rounded clusters. Requires a dry gritty, well drained soil but not too suffer from drought. Seed may remain in the soil over a year.

—carnea v. brigantia. Has narrow leaves and white flowers **ANDR-3B** 30¢
—cylindrica. Tight cushions; 1" tall; choice alpine; HP **ANDR-6** 50¢
Hookeri. Pretty little plant, brilliant pink, 2", HP **ANDR-10** 25¢
sarmentosa chumbyi. Easy RG plant; mats of small rose fls; 3"; HP **ANDR-18C** 25¢
sempervivoides. Fine RG plant; umbels of pink fls; 3"; HP **ANDR-19** 25¢
septentrionalis subumbellata. Sprays of small white fls; 5"; HB **ANDR-20S** 25¢
yunnanensis. **ANDR-23** 30¢
—Androsace Blend. All kinds mixed **ANDR-X** 20¢

ANEMONE (ah-NEM-oh-nee)

Attractive perennials blooming in the spring, summer or autumn; fls come white, rose, red and purplish. They thrive in a rich sandy loam, many in shade; they make beautiful plants in the border and some in the RG. The florist species are *A. coronaria*, *fulgens* and *hortensis*. These come in single and double fls and are grown mostly as fall or winter flowers, and grown much as are freesias; these are not real hardy.

CORONARIA: Poppy-flowered Anemone. This is the popular florist Anemone.

—Cain. Single giant flowered strain, French **ANEM-10C.** 20¢
—Creagh Castle Strain. Famous English strain **ANEM-10CC.** 25¢
—Monarch. A new strain in best colors **ANEM-10M.** 20¢
—Single Giants. Large flowered strain in many colors **ANEM-10N.** 20¢
—Hollandia. Very pretty red with dark centers **ANEM-10H.** 20¢
—St. Bridget. True Irish strain, double brilliant fls, not hardy N of D.C. **ANEM-10S.** 25¢
—Mr. Fokker. Beautiful single bright blue **ANEM-10SF.** 30¢
—His Excellency. Pretty scarlet flowers **ANEM-10SE.** 25¢
—The Governor. Double bright scarlet flowers **ANEM-10SG.** 25¢
—Mixed. All the *A. coronaria* varieties blended **ANEM-10X.** 15¢

alpina. Cream inside, purplish out; 3" across; 1½ ft; HP **ANEM-3.** 25¢
—sulphurea. A yellow variety **ANEM-3S.** 35¢

biflora. **ANEM-8.** 20¢

barbulata. **ANEM-7.** 30¢

cylindrica. Candle A. Greenish white clusters; 2 ft, HP **ANEM-11.** 25¢

demissa. White fls purplish outside, in clusters; Aug-Sept; 1 ft; HP **ANEM-16.** 15¢

Drummondii. Fls cream, blue outside; June-July; moist soil; RG, 6", HP **ANEM-17.** 25¢

globosa. Fls red to bronze-green; May-Sept; 18"; HP **ANEM-19.** 20¢

Halleri. For sunny places, lilac fls; June; RG; 6", HP **ANEM-20.** 25¢

Hybrida japonica. Autumn flowering hyb's white tinged rose, 3 ft; HHP **ANEM-21.** 20¢

magellanica. **ANEM-32.** 20¢

—Giant Form. **ANEM-32G.** 20¢

Lesseri. **ANEM-28.** 4¢

—Lesseri. Dwarf form; ferny lvs; deep pink fls; Aug-Sept; HP; sun **ANEM-28(W).** 30¢

montana. Dark violet, drooping fls; 6"; HP **ANEM-34.** 20¢

multifida. **ANEM-35.** 35¢

myosotidiflora: see *Brunnera macrophylla*.

—narcissiflora. White fl in clusters; 1 in. ac; 1½ ft; HP **ANEM-36(C).** 30¢

—nicaricans. Purple-black fls; Pulsatilla Group; 1 ft; HP **ANEM-38.** 20¢

occidentalis. White or purplish fls, 2" across; May; 1½ ft; HP **ANEM-39.** 20¢

patens nuttalliana. Purple fls very early in spring; 8"; HP **ANEM-44N.** 20¢

—pratensis. Dark purple; 1 ft; Pulsatilla Group; HP **ANEM-45.** 20¢

Pulsatilla. Violet fls; April; likes lime, fine spring fls; 1 ft, HP **ANEM-46.** 15¢

—ameena. **ANEM-46E.** 20¢

—rubra. Red fls 2½ in. ac **ANEM-46R(C).** 30¢

—alba. A beautiful creamy white form; 8" HP **ANEM-46A.** 15¢

—australis. **ANEM-46T.** 20¢

—Violet-Blue. Splendid color strain **ANEM-46V.** 20¢

—Gayeri. **ANEM-46G.** 20¢

—Mallenderi. **ANEM-46L.** 20¢

—montana. Dark violet drooping flowers **ANEM-46M.** 25¢

—patens. Flowers purplish, 2½" across **ANEM-46P.** 25¢

—seerotina. **ANEM-46S.** 20¢

slavica. Collected in Austria **ANEM-54.** 20¢

—ranunculoides. Yellow Wood A.; Golden yellow; Siberia; 8in; HP **ANEM-49(C).** 30¢

—rivularis. White tinged blue; 1½" across; 3 ft; India **ANEM-51.** 25¢

—sylvestris. Pure white, fragrant, nodding fls; May-June; 1½ ft, HP **ANEM-56.** 20¢

—virginiana. White or greenish fls, fine for meadows; June-Aug; 3 ft HP **ANEM-60.** 20¢

—vitifolia. Grape-leaf A., fls white, 2" ac. in cymes, July; HP **ANEM-61.** 30¢

ANTENNARIA (an-te-NAY-ri-ah)

Everlasting; Pussy's Toes. Perennials used in the wild or rock garden, also much used as dried flowers in winter bouquets. Best in dry soil, easily grown. Flowers in heads and the leaves are white-woolly clustered at the base.

aprica. Dense low mats, white or pink heads, 5"; HP **ANTA-2.** 25¢

—dioica. Pale rose fls 1ft; HP **ANTA-8(C).** 30¢

rosea. Foliage distinctly white and woolly; fls rose; 1½ ft; HP **ANTA-17.** 25¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

BALM (Melissa officinalis)

Only a few plants, two to five, will supply an ordinary family. It is used with other herbs in various ways or can be used along with Borage in summer drinks. The dried leaves are used in stuffings as well as in pot-pourri. A crushed leaf emits the sweetest odor of all herbs.

It is very easily grown; sow seeds early in the spring, spacing plants in the permanent place to about 12 inches apart.

They require full sunshine. Cut off the old shoots in the fall and tidy up the bed occasionally. It is a perennial.

THYMUS HERBA-BARONA

This is a dark looking creeping plant whose foliage smells strongly of caraway seeds.

It can be used in seasoning beef, but is more of a novelty. We do not have seed of this but would like to hear from any reader who happens to be growing it.

PLANTING LILY SEED

When planting Lily seed, it is best not to sow too thickly because of the roots tending to mat together. When they are transplanted, much damage is done in separating them.

THE HAWAIIAN JADE TREE

Hawaiian Jade Tree or Naupaka (*Scaevola frutescens* var. *sericea*), a beautiful three foot shrub, both flowers and fruit white, not edible. It will grow anywhere but is especially good for beach planting, in sand. For the far South.

By Otto Degener, Hawaii.

GOING TO FLORIDA THIS WINTER?

Sure! But don't sit down and lose interest in life. Plant some seed of the many beautiful flowering trees and shrubs, that can only be grown in Florida (or southern California).

One never will have time to think of getting old when he has a lot of seedlings coming on; he must see them come into flower! Plan on starting some this year and better get the seeds early so as not to lose any time.

CAESALPINA MEXICANA

An evergreen Mexican small trees without thorns, bearing quantities of bright yellow flowers in upright spikes two or three times a year.

By E. A. Menninger

SEA GRAPES or COCCOLOBIS UVIFERA

A pretty shrub or small tree that will grow on sand and near the ocean. It is a shrub or small tree to 15 feet high. Its berries are edible and make excellent jelly

By Otto Degener.

Farinaceus: (fa-rin-NAY-see-us), starchy or floury.

Ferox: (FEE-rox), very thorny.

Iridifolius: (eye-rid-if-F O H-lee-us), Iris-leaved.

Hastilis: (hass-TYE-liss), referring to a spear.

Hians: (HYE-anz), open, gaping.

Horridus: (HORR-id-us), horrid (with spines)

Gaillardias should be moved only in the Spring.

The Thrifts (*Armeria*) are excellent for edgings but should be lifted and divided every two years.

All species and varieties of *Dianthus* are lime lovers and neglect may cause the loss of your favorites.

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Too Many Seedling Lilies

Mr L. Tuffery of New Zealand cautions about the multitude of seedling Lilies being produced at the present time. We have also cautioned our readers along this line in past issues. Mr. Tuffery brings up the point that all seedlings should come true from seed before being recognized as a definite variety because if it is necessary to propagate them otherwise, it will be impossible to keep down disease, and a few of these bulbs in ones garden will soon infect the whole place.

LABOR LOST!!

Reading of a grower "removing all the soil in a 4 x 10 foot space, a foot deep and filling it with leaf mould" has me wondering if this was mostly labor lost.

Leaf mould always gives a good reaction when applied to the soil but mainly to those soils that have been fertilized with chemical fertilizers plus long cultivation and exposure to the hot sun. This leaves the soil lacking in the necessary micro-organisms, so necessary to good health, both to us humans and our flowers. The addition of a real good leaf mould to any soil and especially to potting soils, I believe, has its best value in inoculating the soil just as is the case with legume inoculation.

GROWING LILIES FROM SEED

The Formosanum seed that I ordered from you, arrived so that I planted it early in 1950. This fall, 1951, they are blooming.

They are a very beautiful Lily, most of the stalks are about 5 feet high but one is better than 6 feet. The Creelman Hybrid seed that I ordered this spring arrived early in June; I have just transplanted them into another flat and will give them considerable protection this winter. The tiny bulbs are are about the size of a small match head.

By Paul Kepner, Nutwood, Ohio

WANTS CAPSICUMS

Mrs. James E. Winfield of Painted Post, N: Y., writes as follows:

Received a sample copy of your Garden Magazine; I am delighted with it and enclose \$2:00 for a years subscription.

I do not know who asked you to do this for me, but I thank them:

I would like to have you try and locate, thru your magazine rare Capsicums, native of Mexico and Central America. I am a collector of these and am searching especially for the Black Mexican and Black Nubian Capsicum.

She asks for sample copies be sent to two of her friends, but Mrs. C. H. Morgan of Alameda, Calif., is already a subscriber. The request for Argentine will be gladly attended to.

Mrs. Winfield mentions her Garden Club, The Homestead Garden Club, of Painted Post, yes, we would be pleased to send sample copies to each member:

LILIES NOT COMING UP!!

Each year along about June we hear about Lily bulbs not coming up. Out side of the fact that some may have been lost thru improper planting and by damage from various animales (We know of one case where the neighbor's dog dug up, and carried away, an entire years planting) the reason some do not show above ground, is natural; these appear the following year.

This is also one reason why you should never dig or hoe around your Lilies. Always hand weed and keep a good mulch on the surface.

October Garden Record

These two columns have been reserved for your own garden record for the month. Make notes on what should be done next year at this time; new plants added this month and many other reminders that will be of value in your gardening operations. The SAIER'S GARDEN MAGAZINE is designed to be useful next year as well as this and copies will be valuable for future references. Indexes will be provided in later issues so that a quick reference can be made to items of interest, especially descriptions and culture.

GEORGE RUSSELL - Creator of the Famed Russell Perennial Lupins



George Russell and "Sonny" amongst his flowers they both loved so well

The Specialist and his Flowers

In the gardens of England, Lupins are standing like many-colored sentinels. Their perennial arrival brings contentment to every gardener, but to an old man of ninety three years, Mr. George Russell, it must bring a fuller sentiment.

For it was not Nature but Mr. Russell who created the Lupin as we know it, making endless variations on its original theme of simple blues and white and, in his single-minded lifetime, adding more color to the English garden than any other man in horticultural history.

For many years of the Victorian era, Mr. Russell worked as a simple jobbing gardener in Yorkshire, tending the lawn and borders of various middle-class persons, in particular a certain Mrs. Micklethwaite, and in the evenings, working on his own allotment. In the present century, his likeness smiles from packets containing Lupin seeds throughout the world. He brought this fame upon himself simply by following his own bent for his own pleasure, absorbed in his allotment and his potting shed and asking help only of the bees.

Once he had given the Russell Lupin to the world, there was really no other Lupin worth its border-space. But it is evident that he never had thought of himself as working for the world, or for a limitless posterity of gardeners. The Lupin in its original form seemed to him an unsatisfact-

ory flower; and so he set about trying to breed a better one, likely to look "nice" on his allotment in York or in the gardens where he was employed for a few shillings a day.

A brief but knowing compliment from the men who worked the allotments near his own was probably the only recognition that he expected or desired. When news began to leak out of unimagined splendors beside the early potatoes and among the makeshift sheds of the York allotments, Russell seems at first to have rejected offers of fame and comparative fortune with genuine embarrassment.

Mr. Russell was born in 1857 in the village of Stillington, in Yorkshire. He remembers being taken as a boy to a flower show, where he saw Lupins decked out in the original simplicity of their blues and whites. They seem to have made an impression, since he remembers them even now. But if the idea than occurred to him that he could grow something better, it was an unconscious time maturing. Forty years later he found himself staring with unrelieved dissatisfaction at a vase of the same old blue Lupins on the diningroom table in the Barnsley home of Mrs. Micklethwaite. And he still thot Lupins were too thin, too colorless, and the wrong shape.

Then Russell began to let his creative impulse have its way, altho he had reached an age when men are usually past being advent-

urous. Unlike the general run of jobbing gardeners, men who seem to be wholly absorbed in the life of the subsoil and are slow and reluctant of human contact, Mr. Russell knew what was going on in the world; in the world of gardening, at all events.

He had heard of a German grower who was offering annual Lupins which seemed to have some of the virtues Russell thought Lupins should have; a plump round keel (the "slipper" part of the flower) and flattened-out standards (the pair of wings which in the old-fashioned Lupin are folded back). But annuals die when they have flowered; Russell's idea was to marry these German annuals to the English perennials and so establish a line of Lupins in which the German qualities might be given a hardy English permanence.

Once he had started, Russell's appetite for experiment grew. For 15 years he patiently crossed and re-crossed his Lupins, ruthlessly scrapping inferior seedlings, struggling all the time with his main problem, the mortality of the annual strain. In June, 1925, his allotment was already blazing with the bright dawn of success, filled with Lupins such as the world had never seen. There were Lupins with tall, symmetrical spikes in astounding new colors and mixtures of colors; Lupins with outspread standards and plump keels which gave the flowers a rich, abundant

Continued on Page 172

The Russell Lupins - Their History

As mentioned in other articles on Mr. Russell, the Russell Lupin is a perennial, and as sold under this name in this country is usually listed as *Lupinus polyphyllus*.

This is incorrect and they should be listed as a hybrid, which they are.

The colors found in the Russell Lupins are not found in *L. polyphyllus*. They are a hybrid race developed by Mr. Russell between the annuals and the blue perennial. The hardiness came from the perennial species and the colors from the annuals he used in his crosses.

It was rather difficult to find information on Mr. Russell and his work and we regret

had been a much bigger undertaking than they would be able to understand.

The named varieties so popular in England are raised from cuttings and the increase in the number of varieties has been held down to only very superior colors and form. But seed saved from these plants will produce superior plants. During late years it has been possible to isolate some plants or rather varieties, for seed, producing a more definite character than has been possible to secure from these hybrids in the past.

Anyone growing them from seed should discard the poorest before they produce pollen, if seed is to be saved, or the inferior plants can be discarded and only the very best transplanted to the border.

It was not our object to "write up" the Russell Lupin to sell seed but just recently Mr. Baker, who is in charge of the growing of Mr. Russell's stocks, writes us that he will be able to send us a quantity of the seed saved from the named varieties and in sealed packets with Mr. Russell's picture for our readers; we do not know the details as yet but this will follow in next booklet of the December issue.

Sawdust as a Mulch

The use of sawdust as a mulch in the garden on perennial plants is a much discussed subject. In the N. Y. Botanical Garden Journal for June there is quite an extended article on the subject by Loren D. Flood, who seems to have solved the matter to his entire satisfaction:

Really the use of sawdust as a mulch should be beneficial to plants, especially those benefited by an acid condition. The newer the sawdust is the less that should be used and well rotted material should produce only the best results: Of course, there should be reason used as to the amount used, just as with any other material.

Mr. Flood applies it after the first heavy freeze: And after the ground is frozen an inch he adds about 1 lb of organic fertilizer to each rose plant. After this he adds more sawdust around each bush to about one foot in height.

The last of March, depending upon the weather, he starts leveling off the sawdust so that it is all level by the time growth is well started.

He believes that sawdust uses up the nitrogen around the plant and to overcome this he applies cow manure or liquid nitrate of soda.

It is the editor's idea that some sawdust is always beneficial, too much may do harm just as too much manure or fertilizer will also.

A mulch on any soil will do more to hold life to a soil than any thing else one can use:

BELLS OF IRELAND

The seeds of this flower has been very scarce and hard to get but fortunately, a supply is now available and is now harvested and in stock.

GOLDEN PLUME CELOSIA

I saw the Golden Plume Celosia used at the Shaw's Gardens, in groups thru their perennial border, with the blue Leadwort (*Plumbago*) at its feet. The effect was beautiful and out of the ordinary. This was about the first of October.

By Mrs. A. C. Waldvogel, St. Louis, Mo.
GET EVERY ISSUE — \$2.00 PER YEAR

Saier's GARDEN MAGAZINE DIMONDALE, MICHIGAN.

VOL. 2. No. 17. DECEMBER 1951.

Published monthly by Harry E. Saier, Dimondale, Michigan; subscription price now is \$2.00 per year or two years for \$3.00.

NOVEMBER ISSUE SKIPPED.

We find it best to skip the November issue. This will not affect your subscriptions for the expiration date will be advanced another month.

SILENE HOOKERI

I frequently read that it is advised to cover it with glass over winter but here where it grows wild, they frequently get a solid month of rain and the soil is wet all winter and dry all summer. They do grow on banks where the water does not stand on them but certainly do not require any protection from overhead moisture.

By Mrs. Peter H. Gourly, Roseburg, Ore.

SAMPLE COPIES

During the past four months we have mailed out a large amount of sample copies. With this issue this has been discontinued and in the future it will be necessary to subscribe if you wish every issue; the expense will not permit us to be so free:

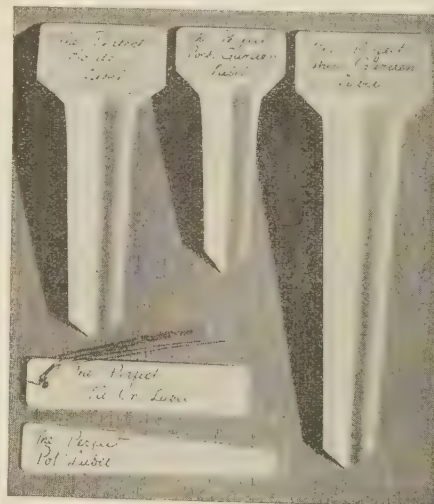
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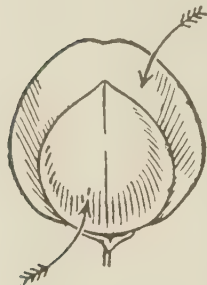


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**PIONEER SEED COMPANY
DIMONDALE, MICHIGAN**

STANDARD



In describing the colors of the different varieties frequent use is made of the words "Bells" and "Standards" and as in the past this has led to some confusion we thought it advisable to print the accompanying diagram.

that we were delayed in this till after his death but the information thus secured came mostly from newspaper articles and thus not written by people having an understanding as to just what Mr. Russell's problems were and what his intentions also were.

Anyone coming in contact with real dirt gardeners, understand what it is all about and how they view the growing of plants; the selection and care and all that goes into the growing of their flowers. This feeling never can be taught in a school; Mr. Russell was such a man.

In England, his opportunities, also, were not as great as they probably would have been here in this country but as far as his work with his Lupins was concerned, all he needed was to be left alone at his work.

The crossing of an annual on a perennial so as to place the annual's beautiful colors in the hardy perennial, was not a years work, even if he had had a university degree; it required a keen observance of his plants and an intuition as to what to discard and then growing the plants on in as large a scale as was possible with his limited means, for it was the winters that did the final selecting and discarding. Mr. Russell's keen observance of what remained each spring was what gave him his beautiful race; why he delayed selling or marketing plants was not that he did not want them to be distributed to other gardens but that they were not ready and after he did actually turn their growing over to others, it was his common remark that the work was hardly begun.

I am sure he realized in the last years of his life that he should have to have many more years to accomplish his object but what he did do was wonderful and he should be remembered by all real gardeners.

In one of the articles we print this month on Mr. Russell, there is a mention of "statesmen". What statesman ever did as much good as one poor man, such as Mr. Russell was, with none of the plush chairs and their unlimited tax-payer's money, ever left to posterity a small fraction what Mr. Russell has? No wonder he said nothing when some reporter asked him foolish questions about the bees and the birds! His work

ANTHEMIS - ANTIRRHINUM

ANTHEMIS (AN-the-mis)

AN-the-mis) Golden Marguerite, Chamomile. Very free flowering perennials with daisy-like flowers, blooms June-Sept. Does well on dry sandy soils and in full sun. Sow seeds in late April or early May, outdoors, or they can be started earlier indoors. Thin plants in garden to 10" apart. Profuse bloomers.

—arabica.	ANTH-3.	25¢
Kelwayi. Pure golden yellow; July-frost; 2½ ft; HP	ANTH-6	10¢
montana. Charming sp, pure white fls 1 ft; HP	ANTH-9	15¢
—simplex. Large flowers.	ANTH-10S.	15¢
Sancti-Johannis. Deep orange fls, 2" heads; 3 ft; HP	ANTH-13	15¢
tinctoria. Golden yellow ray fls; fine for cutting; 2½ ft; HP	ANTH-14	10¢
—Perry's Variety. Bright lemon yellow; fine; 2 ft; HP	ANTH-14P.	15¢
—Anthemis Blend. All kinds.	ANTH-X.	15¢

ANTHERICUM (an-THER-i-kum)

Tuberous-rooted herbs of the Lily Family having racemes of small white lily-like flowers and long narrow grassy leaves. Common names are St. Bernard's Lily, St. Bruno's Lily. In the North they require protection. They make fine GH plants or for use in lawn vases in the summer. Require plentiful supply of water when blooming. liliago. Neat species, small white fls; 18"; HP

ramosum. Tufts of grass-like foliage; white flowers; RG; 2 ft, HP	ANTE-3	25¢
undulatum. White fls in racemes, easy; native S. Af.; 1 ft; HHP	ANTE-5	25¢

ANTIGONON (an-TIG-oh-non)

A tendrill climber grown in the North as a GH vine but in the South it is a popular hardy climber where it has a long blooming season. In the GH it requires plenty of light and not too much root room. Keep roots dry during rest in winter. leptopus. Climber to 40 ft; rose-pink fls; Mexico, tender

	ANTI-1	15¢
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ANTIRRHINUM (an-ti-RY-num)

Snapdragons are popular cut flowers both in the garden and the GH. Early flowers can be had by starting them indoors in Feb. or later on till April. They are tender perennials but grown as annuals. The seed being small, care should be used in germinating them, they may be slow. A. majus is the commonly grown species. Set out after danger of frost is past. For winter bloom sow in August and get seedlings into pots as soon as possible. Pinch off terminal but whenever transplanting.

ALL RUST RESISTENT STRAINS.

MAGUS GRANDIFLORUM: Tall large flowered, making excellent garden cut fls.

—Firefly. Crimson and yellow, popular	ANTR-1F	15¢
—Primrose Queen. Very large flowers in a soft primrose	ANTR-1Q	15¢
—Prince of Orange. A popular orange color, excellent for cutting	ANTR-1P	15¢
—Queen Victoria. The best pure white; necessary in all plantings	ANTR-1V	15¢
—The Sentinal. Bright orange-scarlet with a white throat	ANTR-1S	15¢
—Vulcan. A very bright crimson-scarlet with a dark foliage	ANTR-1L	15¢
—Yellow King. Pure rich yellow	ANTR-1K.	15¢
—Blend of the above colors	ANTR-1X	15¢

MAXIMUM: Tall giant flowered spikes; extra for the good grower.

—Appleblossum. A soft rose suffused with yellow	ANTR-2A	20¢
—Canary Bird. A pure soft canary yellow	ANTR-2B	20¢
—Cattleya. A soft silvery rose-lilac with a golden yellow tip	ANTR-2C	20¢
—Copper King. Coppery scarlet turning into a pure copper color	ANTR-2K	20¢
—Old Gold. A beautiful old gold blend that makes it ideal for cutting	ANTR-2G	20¢
—Purple King. A velvety dark garnet color	ANTR-2P	20¢
—Snowflake. A very lovely pure white that stands up good	ANTR-2W	20¢
—The Rose. One of the most popular deep pinks that holds its color	ANTR-2R	20¢
—Blend of majus grandiflorum varieties.	ANTR-2X.	20¢

MAJUS NANUM: Half dwarf; large flowered; especially good for bedding; stands well.

—Black Prince. A very dark maroon; the darkest color	ANTR-3B	20¢
—Cottage Maid. A bright pink with a white throat	ANTR-3M	20¢
—Crimson King. The best in the deep crimson colors	ANTR-3C	20¢
—Flame. A brilliant orange-scarlet self	ANTR-3F	20¢
—Golden Queen. A large flowered rich golden yellow	ANTR-3Q	20¢
—Rose Eclipse. A large flowered strain in brilliant light rose	ANTR-3R	20¢
—White Queen. The best of this most important color	ANTR-3W	20¢
—Blend of above colors. A hand made blend with good color range	ANTR-3X	20¢

MAJUS NANUM GRANDIFLORUM: Semi-dwarf plants with giant flower heads; beds.

—Bonny Lass. A delicate rose color; soft and attractive in beds	ANTR-4B	20¢
—Exquisite. Soft rose with sulphur yellow lip on white ground	ANTR-4E	20¢
—Golden Monarch. Distinct bright golden color; extra large flowers	ANTR-4M	20¢
—Lady Bird. A cerise and white variety, very distinct	ANTR-4L	20¢
—Orange Glow. Salmon-orange, falls paler, very large flower	ANTR-4G	20¢
—St. George. Orange-scarlet a beautiful and striking color	ANTR-4S	20¢
—Blend of above colors. Hand made for a good bedding display	ANTR-4X	20¢

MAJUS NANUM MAJESTIC: All around type; 2-2½ ft; for both bedding and cutting.

—Avalanche. The best pure white in this strain	ANTR-5A	20¢
—Fire Dragon. Cerise-scarlet with golden center	ANTR-5F	20¢
—Orange King. Rich terra cotta with golden lip merging to deep orange	ANTR-5K	20¢
—Pink Jewell. Has large waved flowers in bright pink	ANTR-5J	20¢
—Rose Beauty. A brilliant pure rose color	ANTR-5Z	20¢
—Rose Marie. Pretty salmon-rose with a golden center	ANTR-5M	20¢
—Sunset. Bright terra cotta shade rosy salmon	ANTR-5S	20¢
—Twilight. Delicate apricot with an old gold center, shaded salmon	ANTR-5T	20¢
Blend of the Majestics. A hand made blend of above varieties	ANTR-5X	20¢

PUMILUM: Excellent dwarf and compact type ideal for low beds.

—Amber Queen. Light orange tinged with amber	ANTR-6A	20¢
—Orange Queen. Best orange bedder	ANTR-6Q.	20¢
—White Queen. The finest white bedding variety	ANTR-6W	20¢
Pumilum Blend. Hand made blend of all varieties; full range	ANTR-6X	20¢

FORCING VARIETIES: Best varieties for greenhouse growing and winter flowering.

—Afterglow. A rich golden bronze color	ANTR-7A	25¢
—Cheviot Maid Supreme. An early flowering bright pink	ANTR-7C	25¢
—Glorious. Bright reddish bronze, 3 ft.	ANTR-7G.	25¢
—Lucky Strike. The best pure white variety	ANTR-7W	25¢
—Rose Queen. The best dark pink variety	ANTR-7R	25¢
—Sunlight. A beautiful orange-bronze color	ANTR-7S	25¢

ANTIRRHINUM continued on next Page

Notable English Gardens

The village of Broadway, in the county of Worcestershire, is one of Englands show places, and has actually been named the most beautiful town in Britain by some fervent admirers. Around this lovely old village, as is to be expected, many gracious gardens have been made during the centuries in which English gardening has climbed to its zenith of perfection, and not the least lovely of these is that which belonged to the great, American born, Shakespearean actress, Mary Anderson, who married Antonio de Navarro in 1889 and thereafter settled in England, until her death in 1940.

This fine garden, set in beautiful natural surroundings, is a delightful mixture of the formal and informal styles and the picture, shown on the December Cover, shows some examples of the fine topiary work for which it is justly famed. Many famous continental gardens in Europe can show unexampled perfection of design in the use of clipped trees and hedges, yet to some eyes, they lack the gracious softening which is attained by the careful use of flowers in association with their severity: In this Broadway garden we see the combination of topiary art and brilliant garden flowers exploited to perfection, and the beautiful indigenous trees have been cleverly adopted into the picture, garden melting into landscape with imperceptible skill which leads the eye from one to the other without a jar.

By Will Ingwersen.

GROWING THE SHASTA FIR

In the 1930s we set out thousands of these beautiful trees to sell for Christmas trees in California: At that time we had the thought of growing some of these trees on cultivated ground to harvest as Christmas trees when they were large enough.

The last year we did this was in 1940 and my husband dug up some seedlings where they were thick, packed them in moss and brought them home.

I am not sure whether these are Abies magnifica or Abies nobilis, as we could not see any difference. They both grow only above 6,000 feet and have the same symmetrical growth and beautiful long needles which have as beautiful color as the Colorado Blue Spruce.

When we brought them down we were so busy, they were not planted for some time. They were small seedlings about 6 inches tall. We set out about 50 shading them on the south side with a shingle. They received no further attention except disking between the rows every spring. They were not even watered the first summer so naturally when we counted them several years later many had died but the ones that survived the first summer grew:

We started to log and gave up the idea of growing the Silver Fir commercially and the place they were growing was subdivided. This was three or four years ago. A lot of the people who bought places, dug up the little trees and put them in their front yards, so we decided to bring them to our new home on the river and plant them as ornamentals. Naturally people had taken the biggest ones, about 3 feet tall then, but we brought home about a dozen small ones.

Since then they have had summer watering and they are growing about twice as fast. I believe it is their nature to grow slowly as I have read that in a park in California, they had grown about 3 feet in 10 years. In the mountains they grow very tall, often over 100 feet but always very narrow.

By Mrs. Peter H. Groully, Roseburg, Ore.

RARE CLEMATIS

Continued from Back Cover Page

- FAIRY QUEEN** (L). Pale pink with a darker bar.
- GIPSY QUEEN** (J). Dark velvety violet purple.
- GRAVITY BEAUTY** (T). Rich deep red.
- HULDINE** (V). Pearly white with mauve-pink bar.
- JACKMANII ALBA** (J). Bears large white double flowers in June and single ones, suffused blue in August.
- RUBRA**. A good rich red variety.
- SUPERBA**. Richest violet-purple, with broad sepals.
- KING GEORGE V** (L). Light flesh with a bright pink bar.
- LADY BETTY BALFOUR** (V). Deep velvety purple.
- LADY NORTHCLIFFE** (L). Deep lavender blue.
- MAD. EDOUARD ANDRE** (J). Bright red.
- MARCEL MOSER** (P). Mauve with deep carmine bar.
- MARIE BOISSELOT** (L). Pure white.
- MRS. CHOLMONDELEY** (J). Light blue, flowers both early and late.
- MRS. HOPE** (L). Satiny mauve with a darker bar.
- NELLY MOSER** (P). Pale mauve pink with deep carmine bar.
- JERLE d'AZUR** (J). Light blue. Should not be hard pruned as it flowers on the previous year's wood.
- PRINCE HENDRICK** (L). Sky blue; large
- ROYAL VELOURS** (V). Deep velvety purple; small flowered.
- SENSATION** (L). Bright satiny mauve.
- THE PRESIDENT** (J). Dark plum-purple large flowered.
- VILLE DE LYON** (V). Bright carmine-red, darkest at the edges.
- W. E. GLADSTONE** (L). Lilac, with a lighter bar; very large flowers.
- WILLIAM KENNETT** (L). Deep lavender.

NOTE: We can furnish plants in some 40 Clematis species; if interested write before the end of the year.

ZONE VI—Generally thru the Cotton Belt of the South. Zone VII is in the far South where not much frost occurs.

The figures in brackets represents the approximate size of the stock to be delivered.

PIONEER SEED COMPANY
Dimondale, Michigan, U. S. A.

SUBSCRIPTIONS AS XMAS GIFTS

We already have had subscribers taking subscriptions out for Christmas gifts. We have printed a limited number of two-toned covers which we are going to hold and use, as far as their number will allow, for these gift subscriptions; if you will send in your orders early, it will allow us to place your card with the the special gift magazine, in a special first class envelope, and then to have the magazine in the mail at the proper time to reach its designation just before Christmas.

These gift subscriptions will cost but \$2.00 or if three different subscriptions are sent in at one time, we will make a special price till December 10th at \$5.00 for the three year subscription: We will also consider this to be your Xmas present to US; nothing will please us more than to see the circulation bigger.

LILY SHOW AT CLEVELAND IN 1952

The 1952 National Lily Show will be staged at Cleveland, Ohio, on July 7-8, 1952. Arnold Davis, Euclid Ave. and East Blvd., Cleveland, Ohio, is the Show Chairman.

Carl Grant Wilson, Dir. American Lily Society.

ANTHEMIS - ANTIGONON

Antirrhinum continued from last Page

- Sunian**. An old reliable orange-bronze ANTR-7T 25¢
- Yellow Wonder**. Improved strain; an extra early pure yellow ANTR-7Y 25¢
- Greenhouse Blend**. This is a carefully made blend of colors ANTR-7X 25¢
- FLORIST NOTE**: Those wishing a larger quantity than the above may order 50¢ packets or 90¢ per one eighth ounce.
- Rock Garden Hybrids, Magic Carpet**. 6" tall in every color combination ANTR-8 20¢
- Tom Thumb**. New European rock garden hybrids ANTR-8X 20¢
- TETRA SNAPDRAGONS: Spikes 1 ft long; strong, husky growth; ideal for greenhouse growing; they are very popular with commercial growers** ANTR-9 35¢
- Asarina**. Trailing Snapdragon; lge cream and yel fls; easy; HP ANTR-10(W) 30¢

APHANOSTEPHUS

Annuals or biennials having solitary flower heads with white, violet or purple ray-flowers or golden disks. Easy to grow; fine cut flowers and bloom profusely.

skirrobasia. Lazy Daisy. Pink and white with golden center, 1½ ft, HA APHN-1 20¢

AQUILEGIA (ak-wi-LEE-ji-ah)

Columbine. One of the most valuable of hardy perennials. Its foliage is attractive and the pretty spurred flowers cannot be equaled for color. Bloom early in the summer. Sow seeds any time so long as they can be shaded from the hot sun and are established early in the fall. Seed is sometime slow to germinate and early planting is best: they do best in a shaded place in the garden.

LONG SPURRED VARIETIES:

- Blue Shades**. Finest strain in shades of blue; 3 ft; HP AQU-I-1B 20¢
- Copper Shades**. A new strain having a straw colored corella; 2½ ft; HP AQU-I-1C 20¢
- Dobbie's Hybrids**. A choice European strain; 2½ ft; HP AQU-I-1D 20¢
- Helena**. A mammoth flowered blue variety; 3 ft; HP AQU-I-1H 20¢
- Mac's Strain**. From one of the best commercial growers; all colors AQU-I-1M 20¢
- Crimson Star**. Brilliant; crimson sepals and spurs, white petals; HP AQU-I-10C 25¢
- Mrs. M. Nichol's Strain**. Very choice in nice blue shades; 2½ ft; HP AQU-I-10N 25¢
- Mrs. Scott Elliott Strain**. Beautiful; extra color combinations; HP AQU-I-10S 25¢
- Munstead White**. A beautiful white strain; HP AQU-I-1T 25¢
- Rose Queen**. Select strain of pretty pink shades; 3 ft; HP AQU-I-1Z 20¢
- Orange and Scarlet Shades**. Very choice; 3 ft; HP AQU-I-1G 20¢
- Pink Shades**. Choice strain in all shades; HP AQU-I-1P 20¢
- Snow Queen**. Finest white, long spur, fragrant; 3 ft; HP AQU-I-1S 20¢
- W-F Hybrids**. Unique colors in Columbine extra good; 3 ft; HP AQU-I-1W 20¢
- Saier's Long Spurred Blend**. Made up of all the very best strains; HP AQU-I-1X 20¢

Columbine Species:

- alpina**. Very rare RG sp; short spurred; deep blue; 1½ ft HP AQU-I-2 20¢
- canadensis**. Yellowish or red sepals, red spurs, May-June; 2½ ft; HP AQU-I-11 20¢
- chrysantha**. Yellow, long spurs; May-Aug; 3 ft; HP AQU-I-12 20¢
- clematiflora**. Pale pink and blue hybrids; 1½ ft; HP AQU-I-14 25¢
- fiabellata**. Pretty dwarf sp, pure white, early; 1 ft; HP AQU-I-22 25¢
- formosa**. Red and yellow; RG sun or shade; 9"; HP AQU-I-23 25¢
- Jaeshkanii** AQU-I-12J 25¢
- Silver Queen**. A beautiful white strain; HP AQU-I-12S 25¢
- glandulosa**. True alpine, powder blue and white fls; RG; 8"; HP AQU-I-24 25¢
- longissima**. Lovely pale yellow fls; very long spurs; 3 ft HP AQU-I-32 25¢
- Hensol Harebell**. A vivid deep violet blue; 1½ ft; HP AQU-I-26 25¢
- pyrenaica**. Dwarf deep blue; 6"; HP AQU-I-38 25¢
- Skinneri**. Crimson red with greenish yellow sepals; spurs pale red HP AQU-I-42 25¢
- Torkington's Double**. Pretty double fls; will show few singles; 2½ ft HP AQU-I-46 25¢
- vulgaris erecta**. Edelwiss AQU-I-48E 20¢
- Species Blend**. Made up of the species above; no long spurred sorts AQU-I-X 20¢

ARABIS (AR-ah-bis)

Rock Cress. Annuals, biennials, perennials with several fine RG species all easily grown; mostly low, fls in terminal spikes or racemes, blooming in early spring.

- alpina grandiflora**. A large pure white strain; 9"; HP ARAB-2G 15¢
- nana compacta**. A very dwarf free flowering white strain; HP ARAB-2C 20¢
- rosea**. Very pretty bright rose strain; silver-gray fol; 6"; HP ARAB-2Z 20¢
- Breweri**. Rare dwarf shrubby sp, RG, fls deep red; 6"; Cal; HP ARAB-9 25¢
- Fruhlingzauber**. Pretty carmine-rose variety from Switzerland ARAB-28F 20¢
- pumila, Snow Cap**. Profuse, white flowers; trailer, RG; 6"; HP ARAB-35S 20¢
- purpurascens**. Dense cushions of neat rosettes; deep rose; HP ARAB-36 25¢
- Schneehaube**. A pretty white strain; very early; HP ARAB-39 20¢
- Saier's Arabis Blend**. Hand made blend of many species and varieties ARAB-X 20¢

ARALIA. (ar-RAY-lee-ah) Araliaceae.

- spinosa**. Devel's Walking Stick, Hercules Club. Hardy to Mich; Lb. \$5.00 ARAL-14. 25¢
- Moseri**: see *Fatsia japonica*.

ARBUTUS AHR-beu-tis)

Grown outdoors in warm sections or under glass in the N; grown from seeds; best in in well drained soil. They are evergreen trees or shrubs with attractive flowers.

Unedo. Strawberry Tree. Drooping clusters white or pink 30 ft; HHP ARBU-4 20¢

ARCTOSTAPHYLOS (ark-toh-STAF-ee-los)

Bearberry, Manzanita. Evergreen shrubs and small trees mostly native of Calif. culture same as for Arbutus; not hardy in the North.

- bicolor**. Flowers rose; native of Calif, 6 ft; HHP ARTO-2 20¢
- tomentosa**. White or pinkish flowers; 15 ft; HHP ARTO-22 20¢
- Uva-ursi**. Prostrate and creeping; white or pinkish fls; HHP; LB \$4.00 ARTO-23. 25¢

ARCTOTIS (ahrk-TOH-tis)

S. African annuals with attractive daisy-like flower heads valuable for cut flowers; easily grown in fair soil and full sun; start seed indoors for early flowers or they may be planted in the open in May. Flowers can be cut in the bud and will open quickly if placed in the sun. They are half hardy in the North.

- acaulis**. Stemless; yellow ray purplish beneath, 8"; HHA ARCT-1 20¢
- grandis**: see *stoechadifolia*.
- stoechadifolia**. African Daisy. Pure white with blue disk, easy; 12" HHA ARCT-8 10¢
- Large Flowered Hybrids**. Shades in yellow, orange, bronze, red ARCT-8H 15¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

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All seeds, plants, bulbs and nursery stock shipped by the Pioneer Seed Company is guaranteed to be in first class condition when it leaves our hands. If, upon arrival, the shipment is otherwise, we must be notified at once. On all sales, our responsibility is not to be in excess of the original purchase price. No sale is made on any other terms.

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\$

ARDISIA - ARISTOLOCHIA

ARDISIA (ahr-DIZ-i-ah)

A large genus of tropical ornamental evergreens for the greenhouse. They make nice pot plants; seed germinates readily.

- crispa*. White fls; grown as a pot plant for its coral red br; TSh..... ARDS-1. 25¢
- japonica*. White fls red berries; Japan; 1½ ft; TSh; Lb. \$5.25..... ARDS-2. 25¢
- macrocarpa*. Tender sh. red fls in cymes..... ARDS-4. 30¢

ARENARIA (ar-e-NAY-ri-ah)

Sandwort. Low growing annuals and perennials usually in low mats; RG.....They are excellent for carpet bedding; do best in sand soil.

- Koitschyana*. Compact, tufted glossy; many white fls; 2-3 ft; HP.... AREN-22(W). 30¢
- laricifolia*. Large white fls, extra RG, 8", HP..... AREN-23 20¢
- lithophila*. Extra good white fls, April-May; 1 ft; HP..... AREN-27 20¢
- montana*. Charming sp; pure white, free bloomer, trailer; HP..... AREN-29 25¢
- Arenaria Blend*. All kinds mixed..... AREN-X 15¢

ARGEMONE (ahr-je-MOH-ne)

Prickly Poppy. Grown as annuals in the flower garden, thriving in any good soil in a sunny place. Large poppy-like fls; 2-4 ft tall; the plants make fine hedges; April.

- grandiflora alba*. White fls, foliage marbled white, 3 ft; HHA..... ARGE-2 15¢
- hybrids mixed*. A French strain of fine hybrids..... ARGE-2F. 15¢
- platyceras rosea*. Blooms for months, bluish rose-crimson; 4 ft; HHA..... ARGE-4 20¢
- platyceras v. hispida*..... ARGE-4H. 20¢
- Argemone Blend*..... ARGE-X 15¢

ARISAEMA. (ar-RISS-seem-ah) Araceae.

Mostly tuberous rooted plants, suitable for moist shady places. They are not hardy in the North but can be grown as pot plants.

- amurense*. Seed from S. Rhodesia..... ARIS-1. 25¢

ARISTEA (ah-RIS-te-ah)

S. African plants tender in the North but grown in the open in Calif. Leaves are in basal rosettes fls blue in spikes. Grown in the GH in the North.

- Ecklonii*. Bright blue fls, 2-3" across; 1 ft; TP..... ARIT-3 25¢

ARISTOLOCHIA (ar-is-toh-LOH-ki-ah)

Dutchpipe Vine. Mostly perennial climbers with odd shaped leaves. Some are grown in the GH. Easily grown from seed.

- elegans*. Purple-brown fls., white markings GH climber, hardy S of D.C. ARST-5 25¢

ARMERIA. (ahr-MEER-ee-ah) THRIFT. SEA-PINK. Plumbaginaceae. G-2 wks

Statice, Thrift, Sea-pink. Dwarf perennials making excellent border and RG plants best in a sunny position and well drained. The genus has been reclassified of late.

- formosa hybrids*. Large fls in many colors; 18"; HP..... ARME-6H. 15¢
- Great Pink*. Clear rose-pink, 2" ac; 1½ ft; HP..... ARGE-6G. 15¢
- Six Hills Hybrids*. A very pretty English strain..... ARME-6S. 25¢
- juniperifolia*. Hardy RG alpine; 2" tall; white to deep pink, HP..... ARME-10. 25¢
- maritima*. White to deep rose; 1 ft; HP..... ARME-14. 15¢
- alpina*. White fls 1" ac; 8 inches high; HP..... ARGE-14A. 15¢
- alpina*. Pink heads, 1" ac; 8 inches high..... ARME-14A(C). 30¢
- tomentosa*. Climber to 30 ft; native N. C.-Fla; HCl; Lb. \$3.25..... ARST-19. 25¢
- Welwitschii v. stenophylla*. Tufted sh pink flower heads 1 ft; HHP..... ARME-22 25¢
- Armeria Blend*. All kinds mixed; will make fine flowers for drying.... ARME-X. 15¢

ARNICA (AR-ni-ka)

Perennial plants with clustered basal lvs. and bright yellow fls on long spikes. Effective in colonies in the wild garden growing rapidly in acid soil.

- cordifolia*. Hardy; heads, ray fls; 15"; HP..... ARNI-6. 20¢
- montana*. Mountain Tobacco. Large heads yel. ray fls; 2 ft; HP..... ARNI-11. 15¢

ARTEMISIA (ahr-tee-MIZ-e-ah)

Wormwood. Hardy aromatic plants. The fl is in heads and composed entirely of tubular disk fls. Grown mainly for their aromatic and medicinal properties; thrive in poor soils. Flower in late summer and make nice plants in the back border.

- caucasica*..... ARTE-15. 25¢
- sacrorum v. viridis*. Summer Fire. Erect; yellowish; 3-5 ft; HA..... ARTE-40V. 20¢
- vulgaris*. Erect yellowish fl heads; free; fragrant; 3½ ft, HP..... ARTE-50 20¢

ARTHROPODIUM (ahr-throh-POH-di-um)

Tufted perennials of Lily Family grown in GH in N; lvs grass-like, fls in clusters. *cirrhaleum*. 3 ft stems carrying hundreds small white fls; cuts (5-6) HHP ARTH-2 25¢

ARAUJIA. (ar-RAW-jee-uh) Asclepiadaceae.

Woody climbers with salver or bell-like flowers. They are tender plants and grown under glass in the North. Plant seed in early spring over some heat.

- Sericofera*. White or pinkish fls, 1" ac; native of S. Brazil..... ARAU-1. 25¢

ARUM (AY-rum)

Require rich soil, plenty of water and a shady place; some are pot plants in GH and others are hardy. If undisturbed they will form better flowers; tuberous rooted.

- italicum*. Creamy white fls in sp; pretty evergreen fol in S; 1 ft; HHP..... ARUM-1. 20¢
- pictum*. Spathe with green tube and purple limb..... ARUM-6. 20¢

ASCLEPIAS (as-KLEE-pi-as)

Silkweed. Attractive habit and showy flowers; they make nice plants in the border. They are easily grown from seed started same as most perennials.

- currassavica*..... Blood Flower. Reddish purple corolla, or. hoods; 3 ft; TA..... ASCL-3 20¢
- syriaca*. Green or purplish fls; July-Aug 5 ft HP..... ASCL-14 20¢
- tuberosa*. Orange flowers, July-August, 2-3 ft., HP..... ASCL-15. 15¢

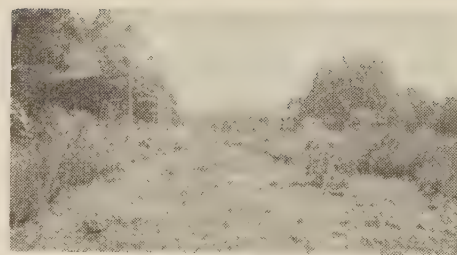
ASPARAGUS (ass-PAR-ah-gus)

The decorative species are easily grown but are tender plants in the N. Those listed below are grown for their green foliage.

- asparagoides*. Smilax of the GH. Berries dark purple..... ASPG-4. 25¢
- plumosus*. The tall climber for GH; fine foliage for cutting; TP..... ASPG-16. 25¢
- racemosus*. Tall cl; handsome foliage; dense sprays fls..... ASPG-17. 25¢
- scandens v. deflexus*. Small form, deflected branches; white; 4 ft; TP..... ASPG-18. 25¢
- Sprengeri*. Climbing fern to 6 ft; popular GH plant for greens..... ASPG-20. 25¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN



Creeping Wild Thyme

It spreads rapidly and is ideal between flagstones. It is very hardy and a good seasoning herb as well.

ENGLISH CUSTOMERS NOTE

Those wishing to subscribe or wanting any other service from us or seeds from the Pioneer Seed Company, can make their remittances payable to Hiller and Sons, Winchester, England, where they will be properly attended to for us; this service can be used by anyone in the sterling bloc.

MY SMALL GREENHOUSE

In the September issue you mention the small greenhouse. I would never be without one, no matter how small a one I had to start with. There is something about it that makes you feel proud, when you take your friends outside and show them all the different things you have planted; some just coming up, some ready to set out, some that are blooming and have to stay in the greenhouse.

My greenhouse is 9 x 15 feet and I have 130 Orchid plants and 9 Antheriums in there, besides my tropical plants that I have started from seed.

I feel that if you cannot start a greenhouse on account of the cost, for heating and plumbing and all the rest that goes with it, I would make myself a small one that fits outside of your window. Then all you would have to do is to put in a small heating unit and plug into your wall socket. Then you can see your plants all the time and when you want to water them, raise your window and do so or leave it open if you wish.

By Mrs W. C. Tobey, Oakland, Calif:

Editor's Note: Mrs. Tobey apologizes for "taking up our time"! Why didn't you write more about your greenhouse and how you manage it?

We would like to make the greenhouse column a regular feature and we wish our readers who fortunately own one, would write in often.

What one should start and how, during the next month, is always interesting. Then there are many rare flowers listed in the magazine columns, that are not commonly grown and it would be interesting to have articles on your success with these rare plants.

THYMUS HERBA-BARONA

In your last issue you wrote of Thymus Herba-barona, long ago I raised it from seed.

I put it in a garden I did at Cape Elizabeth and I saw it this autumn after all these years, draping a rock with its dark stems and leaves. It is one of the sweetest smelling of the Thymes and is delightful to work around: I no longer have it myself, however.

Mrs. Harry Hayward, Maine.

GET EVERY ISSUE — \$2.00 PER YEAR

ASTERS - ASPHODELUS

ASPERULA (as-PER-eu-lah)

Used mainly in the RG or for carpeting shady places, growing best in moist spots. Easily grown; the leaves are in whorls and the flowers small lily-shaped, in white, blue or pink. Woodruff.

- orientalis*. Pretty blue fls effective in carpeting; ft; HP..... **ASPR-13. 15¢**
—*tinctoria*. Pro-cumbent, white fls, red outside; 1 ft; HP..... **ASPR-15. 15¢**

ASPHODELINE (ass-pho-de-LIN-ee) Jacob's Rod.

Differs from Asphodelus only in the flower stems being leafless and the foliage clustered at the base; culture.

- lutens*. King's Spear. Frag. yellow fls in racemes; part shade; 2-4 ft; HP..... **ASPD-4. 20¢**

ASPHODELUS (AS-foh-del-us)

Easy culture in the border or wild garden in rich sandy loam. Flowers lily-like.

- Species from the Pyrenees*..... **ASPH-3. 30¢**

ASTERS

Sow seeds indoors 6 weeks before time to set out in their beds which is after danger of frost has passed. Do not crowd, usually a foot apart, and use care that do not suffer a set back thru over watering, crowding or drought. It is best to transplant seedlings once. As the roots of Asters are shallow, use care in cultivating. Make succession plantings for continuous bloom, but when possible use different types which flower at different times. All strains are wilt resistant unless so noted.

AMERICAN or VICK'S BRANCHING:

Plants 2-2½ ft tall, branching, robust, flowers double, semi-ball shaped, late Aug.

- White, 1W; Crimson, 1C; Lavender, 1L*; separate colors..... **AST-1. 15¢**

Blend of American Branching. A careful hand made blend..... **AST-1X 10¢**

CREGO:

Plants robust, branching, 2-2½ ft fls large, double, blooms mid-Aug; all purpose type.

- Enchantress (WR)*. Lively salmon rose, NEW..... **AST-2E 15¢**

- Light Blue (WR)*. Fine color for cut flowers..... **AST-2B 15¢**

- Peach Blossom (WR)*. Delicate pink, excellent for cutting..... **AST-2P 15¢**

- Crego Blend (WR)*. Just the right blend for cut flowers..... **AST-2X 15¢**

EARLY BEAUTY:

Planted at the same time, they will flower with the Cregos and American Branching or in early Sept till frost; plants 2½-3 ft, large well formed flowers of excellent keeping qualities; wilt resistant.

- Azure Fairy*. Just the right shade of light blue..... **AST-3A 15¢**

- Crimson*. A deep rich cut flower shade; excellent for cutting..... **AST-3C 15¢**

- Deep Rose*. Makes a rich shade in rose-pink..... **AST-3Z 15¢**

- White*. All planting should contain plenty of white..... **AST-3W 15¢**

- Early Beauty Blend*. A blend for the right cutting colors..... **AST-3X 15¢**

GIANTS OF CALIFORNIA:

Non-resistant strain. The flowers are of the Crego type, curled and twisted making a fine cut flower sort; stems stiff and non-branching, 3 ft tall, blooming late summer.

- Azure Blue*. Rich cut flower shade..... **AST-4B 15¢**

- Crimson*. Rich color strain..... **AST-4C 15¢**

- Loveliness*. A rich pure pink touched with salmon..... **AST-4L 15¢**

- Peach Blossom*. Opens white, flushed lavender-pink..... **AST-4P 15¢**

- White*. Pure white of excellent form..... **AST-4W 15¢**

- Giants of California Blend*. A cut flower blend in right proportion..... **AST-4X 15¢**

GIANT COMET:

Plants upright 2 ft, non-branching, flowers feathery, double, in bloom middle of Aug.

A fine type for cut flowers, wilt resistant.

- Rose*..... **AST-5Z. 15¢**

- Salmon Queen*. Dandy soft color for cutflowers..... **AST-5S. 15¢**

- Giant Comet Blend*. A blend for cut flowers..... **AST-5X. 15¢**

KING or NEEDLE TYPE:

- Blend of Colors*..... **AST-9X. 20¢**

OSTRICH FEATHER:

Plants 2-2½ ft branching, blooming in mid-August. Flowers feathery, double, and a all purpose flower; wilt resistant.

- Bright Rose*..... **AST-6Z. 15¢**

- Crimson*..... **AST-6C. 15¢**

- Malmalson Pink*..... **AST-6P. 15¢**

- Pure White*..... **AST-6W. 15¢**

- Blend*. A hand made blend for cut flowers..... **AST-6X. 15¢**

POM POM TYPE:

Small flowered type; incurved petals; showy cutflower for small bouquets or edging.

- Rose*..... **AST-11Z. 20¢**

- Crimson*..... **AST-11C. 20¢**

- Blend of Colors*..... **AST-11X. 20¢**

PRINCESS:

Attractive new cutting type; 2-2½ ft tall branching, early, 3-3½ inch flowers on strong stems and with full deep crested centers surrounded by several rows of dainty plume-like petals. Wilt resistant.

- Barbara*. New orchid color, very attractive..... **AST-7B. 15¢**

- Bonnie*. Soft salmon-rose..... **AST-7N. 15¢**

- Elizabeth*. Pure white making a beautiful cut flower..... **AST-7E. 15¢**

- Linda*. Clear rose beautiful for cut flowers, NEW..... **AST-7L. 15¢**

- Margaret*. NEW. Very pretty deep rose..... **AES-7M. 15¢**

- Susan*. NEW. True deep blue, in a clear shade..... **AST-7S. 15¢**

- Princess Blend*. A blend of above varieties; a beautiful addition..... **AST-7X. 15¢**

QUEEN OF THE MARKET:

A very popular early flowering Aster, branching, 20 inch tall, blooming in early August, one of the most popular for early cut flowers. Wilt resistant.

- Ballet Queen*. Fascinating salmon-rose, extremely wilt resistant..... **AST-8Q. 15¢**

- Crimson*..... **AST-8C. 15¢**

- Pure White*..... **AST-8W. 15¢**

- Salmon-rose*..... **AST-8Z. 15¢**

- Queen of the Market Blend*..... **AST-8X. 15¢**

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

IRIS

By Walter Welch, Indiana

CHROMOSOMES IN IRIS

For the ordinary gardener the genetical composition of their plants is of little interest. They are concerned with quality and performance. But for the breeder, a knowledge of chromosomes and their behavior is of vital importance. Everything concerning a plant is dependent upon the chromosome composition and that includes hardness, height, season, color, form, shape and ability to survive and reproduce its kind.

All plants comprising any one species have the same number and kind of chromosomes and because chromosome numbers vary from species to species it is possible to identify a plant by its chromosomes. For example, the diploid forms of *I. variegata* and *I. pallida* have 24 chromosomes, most of our Tall Bearded Iris have 48 chromosomes, and the Dwarf Bearded species vary, as *I. pumila* 32, *I. attica* 16, *I. mellita* 24, *I. arenaria* 22 and *I. chamaeiris* 40 chromosomes.

Fertility and sterility are intimately bound up with the number and behavior of the chromosomes. Often it is possible to cross these differentiated plants but it will result in an infertile progeny, in other cases there will be partial fertility, occasionally giving a few viable seed. Fertility ordinarily increases as the chromosomes become adjusted in these later hybrids.

The functional mechanism responsible for this behavior is the ability of the chromosome of the parents to pair and separate regularly at the reduction division, which they will do if identical or nearly so. Chromosomes which are dissimilar will not pair at any time but if partially similar may pair at times and fail at others.

The pairing of chromosomes is a very complex performance. After pollination, the pollen of one parent meets in fertilization with the ovule of the other parent, to form an original somatic or body cell. The pollen and ovule each contain their quota of chromosomes from the different parents, which constitutes a hybrid. These sets of chromosomes then split into double the amount, retire to opposite ends of the cell, a wall is formed between them and results in two identical cells in place of the original somatic cell. A continuation of this process eventually produces a full grown plant by what is called cell growth.

There is no pairing in this process, this function is reserved for the production of pollen and ovules, known as gametes. At this particular point there is no splitting of chromosomes, but instead whole chromosomes from the opposite parents within the cell must pair, then retire to opposite ends of the cell, from whence they go into separate gametes. In this pairing the chromosomes lie closely together in a medium line before retiring to opposite ends of the cell.

If the numbers from each parent are equal and not differentiated, pairing will be regular and fertile gametes will be obtained, but for example, if the chromosomes are related and differentiated, no pollen or ovules will materialize. Also if the numbers are different, say 8 from one parent and 12 from the other, the 8 of one may pair with 8 of the 12 from the other parent, leaving 4 chromosomes unpaired.

Continued on page 169

IRIS Column Continued

Continued from Page 168

mosomes unpaired, which loose chromosomes will not retire to the opposite ends of the cell but may go into one or the other daughter nucleus or left lying around to degenerate late. This will explain why often we find plants with an odd number of chromosomes, over or under the normal amount.

During this process of pairing, the chromosomes which are thread-like bodies, much like a string of beads, with each bead being a gene or factor for some particular character of the plant, often become twisted or parts reversed, forming a break, so that a part from one separates with a part of the other to form a new combination. This gives us our variation or what is called segregation of characteristics in the new generation. This is called the cross-over.

Scientists have determined the amounts and kinds of the various combinations of factors to be expected from a given cross of plants where the genetical composition of the parents is known. A knowledge of genetics is not an absolute necessity for success in breeding by the trial and error method one can eventually reach an objective but it will save many a failure and lots of time and work to know just what will happen, when you place that pollen upon the stigma of a plant.

Editor's Note: Now that winter is coming and you will have evenings to think out your 1952 garden plans, you may have a problem in some improvement undertaking that Mr. Welch may be able to help out, in one of his winter columns; just write your question and we will be pleased to do what we can.

LOOKING FOR THESE

Some of our readers ask for the following. Anyone know of a supply?

Constantine Apple.

Calla occullatta, Pride of the Conga.

Old Fashioned Roses: Albert Columbe, John Hopped, Jubilee, Louis van Hoite, Mons Louis Richard, Oscar Croibet, Souv. de Boustetten. Also Teas Mrs. Croiblet, Souv. de Jean Soupert, Victoria Harrington and Max Krause.

Costa Rica Caster Bean, bronze foliage.

Columnnea gloriosa.

Aglaia odorata.

Gratiola.

Hedge Hyyslop.

GARDEN ART IN STONE

Just recently William R. Speck, of 316 Herkimer Road, North Utica, N. Y., when ordering some seeds, enclosed one of his interesting little catalogs on garden ornaments.

Ducks, birds, chickens, bird houses, even rock garden stones: And his prices are not high either. If interested, drop him a postal for one of his catalogs. I am sure he would be pleased to mail you one.

NEW DELPHINIUM PRESIDENT

After holding office for four years, Carl Grant Wilson, present president of the American Delphinium Society, announces his successor, Mr. C. E. Little, of Richmond Hill, Ontario, Canada. Mr. Little has been elected to take office on January 1st 1952.

Whenever SAIER'S GARDEN MAGAZINE can be of assistance to you and the Society, no not fail to advise us; you will always find us pleased to further your work.

HARDY BELLIS DAISIES

The letters C and W stand for cool and warm, above or below about 60 degrees F; D and L stands for dark and light, to keep the seed pan in a light or dark place when while germinating.

BELLIS (BELL-iss)

Herbaceous annuals or perennials. They need a fertile moist soil with plenty of sun. Seed planted in the fall and wintered over in the cold frame will flower in the spring or seed can be started indoors with same result. They grow 6-8 inches tall and make very attractive bedding or edging plants; cool weather plants; try with Pansies or Myosotis.

CHEVREUSE: Large flowering French strain.

—White. BELL-5W. 20¢
—Rose. BELL-5Z. 20¢
—Crimson. BELL-5C. 20¢
—Mixed. BELL-5X. 20¢

MINIATURE TYPE: Small flowered type very dainty for edging; HB.

—Rose. BELL-7Z. 20¢
—White. BELL-7W. 20¢
—Miniature Mixed. BELL-7X. 20¢

MONSTROSA: Giant flowered type, strong growers; fine for bedding.

—Red Beauty. Double red flowers. BELL-4R. 20¢
—Rose Beauty. Pretty double rose flowers. BELL-4Z. 20¢
—White Beauty. Double pure white. BELL-4W. 20¢
—Monstrosa Blend. In red, pink, rose and white. BELL-4X. 15¢

MONSTROSA TUBULOSA: Flowers with pretty quilled petals; the flowers double.

—Bernina. White changing to pink; double. BELL-6B. 20¢
—Etna. Double dark red. BELL-6E. 20¢
—Lutea. Double rich yellow flowers. BELL-6L. 20¢
—Tiflis. Double carmine-rose. BELL-6T. 20¢
—Tubulosa Blend. Made up of the above varieties. BELL-6X. 20¢

PERENNIS: True or English Daisy; 6"; HP; popular spring plants

—Longfellow. An extra double bright red strain. BELL-3L. 15¢
—Rose. Same in a ood rose. BELL-3LZ. 15¢
—Vesuvius. Extra double ruby-red. BELL-3V. 15¢
—Rosea. White with delicate rose center. BELL-3Z. 15¢
—Snowball. Pure white; double flowers. BELL-3W. 15¢
—Perennis Blend. Above varieties. BELL-3X. 15¢
—Bellis Daisies Mixed. All kinds and types. BELL-X. 15¢

BERBERIS (BER-ber-iss) BARBERRY. Berberidaceae.

Sow seed in the fall when they will germinate in the spring.

—Thunbergii. Well known Japanese Barberry; clean seed \$5.00 lb. BERB-84. 25¢
—Thunbergii atropurpurea. Lvs dark scarlet-red; clean seed \$5.00 lb. BERB-84A. 25¢
—pluriflora. More erect and leafy; from selected plants; Oz. \$1.50. BERB-84P. 50¢

BESSEYA: see Synthyris.

BIDENS (BY-denz) Burr-marigold

Closely related to Cosmos and resembles it with its divided leaves and clustered heads of yellow or white ray flowers. Grow in moist places; easily grown.

—dahliodes. (Cosmos atrosanguinea)....Large Dahlia-like fls; red, HP. BIDE-3. 20¢

BIXA (BIX-ah) Annatto

Tropical American tree grown in S Fla for the annatto dye from pulp around seeds.

—Orellana. Easily grown from seed; the dye used in butter coloring. BIXA-1. 25¢

BLOOMERIA (bloo-MEE-re-ah) Golden Stars

They stand several degrees of frost; thrive in sandy soil and sun; corms should be dug after ripening and replanted in the fall.; easily grown from seed, HHP.

—Clevelandii. A miniature Bloomeria; cute in the RG; HHP. BLOO-2. 30¢
—crocea. Golden Stars. Pure yellow; 18 inches; not hary in far N; HHP. BLOO-1. 30¢

BOLTONIA (bol-TOH-nee-ah)

They resemble wild Asters; are easily grown from used and make nice plants in the border or wild garden; found in moist places; HP.

—latjsquama. Heads in rays blue-violet; 1 inch across; HP. BOLT-2. 20¢

BOLUSANTHUS (bo-luh-SAN-thus)

One African trees that can be grown in S. Calif.

—speciosus. Rhodesian Wisteria. Tr 15 ft; pendant racemes purple-blue. BOLO-1. 30¢

BOMBAX (BOM-bax)

Large trees suitable only for southern Fla; ornamental in the tropics.

—malabaricum. Fls to 4"; clusters; fruits 6 in. long. BOMX-1. 25¢

BOMAREA. (boh-MAY-ree-ah) Amaryllidaceae.

S. AM. twining plants grown in the cool green house or out doors in the South. Rich soil and partial shade best for them.

—Andean species. Collected in Columbia. BOMA-1. 40¢

BOTTIONEIA. (bot-ti-OH-ne-ah) Lilaceae.

One bulbous perennial from Chile.

—thysanoloides. White fls; similar to Anthericums; 16" high; HHP. BOTT-1. 30¢

BRACHYCOME....(brak-KIK-oh-me) Swan River Daisy

Herbaceous annuals and perennials generally branching stems and solitary or loosely clustered heads of daisy-like flowers. Easily grown from seed.

—Blue Star. Covered through the summer with star-shaped blooms; 12 in. HA. BRAK-1B. 15¢

—White. BRAK-1W. 15¢

—Pink. BRAK-1P. 15¢

—Mixed. BRAK-1X. 10¢

We intend the classifications to be correct, even to the capitalization of the species names and will appreciate any corrections. Index will appear in a near future issue.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Our READERS' COLUMN



POTTING COMPOST.

The following compost is highly recommended for special pot plants.

Use screened soil; 7 part good loamy soil; 1 part peat; 2 parts clean sand; and to each bushel of this add 1 1/2 oz. hoff and bont meal; 1 1/2 oz. superphosphate; 1 oz. chalk or ground limestone. Of course mix well.

LOOKING FOR THESE

We have calls for seed of the following and if any of our readers have these plants and some seed please advise us:

Abutilon megapotamicum.
Acalypha hispida (sanderi).
Allamanda chalonii (?).
Artemisia pauciflora and santonica.
Brunfelsia calycina.
Cantua dependens.
Medinilla magnifica.
Ochna multiflora.

HOW COME..

Mrs. Mable E. White of Beloit, Wis., writes a nice letter about our Magazine in which she states that she finds it the best to her liking, especially in that the others she has are 2/3 advertising, in which she is not interested.

But she "has one query": how come you can buy one Lily bulb cheaper than you can at the 10 rate. Probably some form of a misprint.

Well, we cannot exactly say it was a misprint, when there were so many; if it had been but one mistake, that excuse would have gotten by. Possibly we can get by on this by saying that we were favoring the poor fellow who could afford but one bulb and making the rich pay the bill; that is a good excuse now-a-days. However you will have to admit we are getting better with each issue.

SOME QUESTIONS FROM CANADA

What are the soil requirements for *Boronia megastigma*..

All we know about its requirements is that it must be a well drained soil. They would be greenhouse plants in Canada.

What is the name of the perennial *Browallia*?

The only *Browallias* we have handled are annuals and we do not know of a perennial.

Are there two varieties of *Aquilegia canadensis*? I am told the eastern one has a different name from the western:

This species is wide spread over the eastern part of the country and there would be variations depending upon the soil and locations. Hortus lists *nana* and *flavescens* as varieties or forms: The species also has crossed much with *A. formosa*, with many types varying towards the latter.

Where can I get seeds of the following *Gentians*: *G. sikkimensis* and *G. cachemirica*?

The Pioneer Seed Company has both.

Where can I get the cultivated form of the *Penstemon Menziesii*?...I know it is native around here but I would like a cultivated form.

The cultivated forms are more liable to be more uniform and of better type plants: The Pioneer Seed Company has this in an English strain.

ASTRAGALUS - BAUHINIA

SUPER GIANTS OF CALIFORNIA:

This is the largest and most fully double Aster class yet developed; flowers 6-8 inches across, graceful, interlacing petals. Plants 2 1/2 ft tall; 6-8 non-lateral stems per plant.

—El Monte. A clear deep crimson.....AST-10C. 20¢
—Los Angeles. A beautiful shell pink making it a fine cut flower.....AST-10L. 20¢

ROSANNA.....AST-11R. 25¢

A new Aster, excellent for pot culture, well proportioned, 10-12" high with strong stems having a bunch of several half double flowers in bright carmine-red with a yellow center; potting can be done without fading, whole plant starting to flower same time.

—Heart of France. Late branching, flaming red.....AST-HF. 20¢

—Nero. Semi double branching, red.....AST-N. 15¢

Single Flowering VIVID. Red.....AST-12V. 20¢

PERENNIAL SPECIES OF ASTERS:

—alpinus. Violet fls; 10 in; HP.....AST-14(C). 30¢

alpinus albus. RG, white form, daisy-like fls on 6" plants, HP.....AST-14A. 20¢

—Large Flowered. Large fls on 9" plants in various colors; HP.....AST-14L. 20¢

—superbus. Larger than the type and showy; HP.....AST-14S. 20¢

caucasicus. 1 1/2" heads, purple ray, 2 ft; HP.....AST-20. 20¢

commutus crassulus. Small flowered white, Mont; Aug., 2 ft; HP.....AST-23. 20¢

conspicuus. Profuse, 1" pure rose fls, 18 inch; HP.....AST-25. 20¢

Farrerri. Narrow violet ray petals, vermilion-orange disk; nice 1 ft; HP.....AST-40. 25¢

—himalaicus. Heads 1 1/2" across; lilac-blue ray fls; 1 1/2 ft; HP.....AST-57. 30¢

—sikkimensis. Indian species.....AST-108. 30¢

subcaeruleus. Very large lilac-blue fls; very good, 9"; HP.....AST-110. 25¢

—Star of the Warburg. Bright lavender-blue, prominent yellow center.....AST-116W. 25¢

Perennial Aster Blend. All hardy perennials.....AST-PX. 20¢

The list of Asters will be very much enlarged in the next time around and all the new and best strains and types will be included.....If you use Aster seed by pound write.

ASTILBE (a-STIL-be)

The florist Spirea. Easily forced in the greenhouse. Easily grown from spring sown seed; use soil containing sand, peat and leaf mold. Thrives in moist soil and part shade.
rivularis. Yellowish white fls i large panicles; 5 ft; HHP.....ASTI-10. 20¢
chinensis pumila. Dwarf form, white fls; 2 ft; HP.....ASTI-4. 20¢

ASTRAGALUS (as-TRAG-ah-lus)

Milk Vetch. Deeply cut leaves and purple, yellow or white flowers in spikes or racemes thrives in light sandy soil and used in the rock garden or border; easily grown from seed planted in the spring.

Purshii. Mat-forming, white woolly lvs; fls white or blue; sun, RG, HP.....ASTR-30. 20¢

ASTRANTIA (as-TRAN-shi-ah)

The flowers are in odd and attractive umbels and make interesting plants in the border, especially in moist places. Seed from all varieties does not come 100% true.

—bavarica.....ASTN-3. 25¢

ASTROCHLAENA.

—malvacea. From South Rhodesia.....ASTO-1. 25¢

ATROPA. (A-thro-pa) BELLADONNA. Solanaceae.

One species important as a drug and the source for atropine. It is poisonous and not a subject for the flower garden.

—Belladonna. Shining black berries; 3 ft; HP (POISONOUS).....ATRO-1. 25¢

AUBRIETA (au-BREE-shi-ah)

Choice mat forming perennials prized for their abundant flowers in the spring. They are favorites in the rock garden and closely allied to and resemble *Arabis*. Easily grown from seed, started any time, for flowering the following season. They are especially good between rocks and like a little shade.

—Campbelli. Ageratum blue.....AUBR-2C. 20¢

deltoidea. The species of which all the popular garden varieties belong.....AUBR-2. 15¢

—Eyrei. Very beautiful blue; HP.....AUBR-2E. 25¢

—graeca. Large and more bushy than type; HP.....AUBR-2G. 25¢

—hybrida. Large flowered types from crosses; HP.....AUBR-4. 25¢

—Glorious Regal Hybrids.....AUBR-3G. 20¢

—Hendersonii.....AUBR-2H. 20¢

—Leichtlinii. Deep purple-rose; HP.....AUBR-2L. 25¢

—Whitewall Gem. Pretty violet flowers; HP.....AUBR-2W. 20¢

—Viola. Improved form, pure violet flowers.....AUBR-2V. 20¢

—Aubrietia Blend. Many varieties mixed; HP.....AUBR-X. 20¢

AUCUBA (AU-keu-bah)

—japonica. Tree to 15 ft; scarlet fr; hardy to Ohio River.....ACUB-6. 25¢

—aureo maculata.....ACUB-6A. 25¢

AVENA (ah-VEN-ah) Ornamental Oats.

Mostly annual grasses with loose panicles, seed sown early in the spring or in the fall in the South. They are used mainly as ornamental grasses and can be dried.

—sterilis. 3 ft; awns 2 inches or more; HA.....AVEN-6. 15¢

AZALIA: See under *Rhododendron*, to which it belongs.

BABIANA. (bab-ee-AY-nuh) Iridaceae.

Low cormous plants from S. Africa with red, pink, yellow and lilac flowers. Grown in the open in the South or they can be grown in pots in the greenhouse.

—hypoenia. South Rhodesian species.....BABI-4. 25¢

BAERIA (BEHR-ee-ah) Goldfields

Small annuals of Calif., 1 ft. high with many heads of small yellow daisy-like flowers. Bloom in late spring and summer; easy; used for edging or for everlasting.

—chrysostoma. (aristata). 10 in. high; heads 1/2 inch across, HA.....BAER-1. 20¢

BALLOON VINE: see *Cardiospermum Halicacoum*.

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

BEAUMONTIA - BEGONIAS

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

BARLERIA (bar-LEER-ee-ah)

Tropical plants grown in the greenhouse in the N or out doors in the far S.
—**lupulina**. Thorny sh; long gr. lvs. with red mid rib; fls yel; GH.....**BALR-3. 25¢**

BAUHINIA boh-HIN-ee-ah)

Tropical plants of Pea Family. In the South they make a fine showing with their colorful racemes of white, purple and yellow flowers. Tender perennials.

—**acuminata**. Sh to 6 ft; handle as TA in N; fls white; good pot pl.....**BAUH-2. 20¢**
—**Bauhnia Mixture**.....For those who wish to try them all.....**BAUH-X. 20¢**

BEAUMONTIA (boh-MON-shi-ah) Apocynaceae.

—**Dwarf Single Mixed**.....**DIAN-13SX. 15¢**
—**Schonheit**. Cross of heddewigii x chinensis; very pretty blood-red.... **DIAN-668S. 20¢**
—**cardinale**. Scarlet D. Erect, 2-3 ft; bright scarlet with yel. petals **DELP-16. 25¢**
—**orientale**. Violet-purple; E. Europe; HA..... **DELP-65. 25¢**
—**Mausier Strain**. A superior German strain; very good..... **DIAN-12MZ. 30¢**
and white. Not hardy in the North but can be taken up over winter in dry soil.
suitable only for the far South. Flowers before the leaves appear.

—**Mezereum**. Decd; fragrant lilac fls in clusters; scarlet fr; HSH..... **DAFH-16. 25¢**
by 4-winged or -angled pods; not hardy in the North.

the border and for cutflowers which can also be dried; the smaller species are excellent place. The flowers are in terminal heads, white, purple, yellow or orange. There has

BEANS, Ornamental

—**Scarlet Runner**. Climber with scarlet fls; ornamental vine; 10 ft.....**BEAN-1. 15¢**

BALSAM, GARDEN: See Impatiens balsamina.

BALSAMORHIZA (Bol-sam-or-RYE-zuh) Balsam Root

An American genus having Sunflower-like flowers. The roots are large and resinous. They are nice plants in the wild garden.

—**sagittata**. Leaves like shields; 1½-2 ft tall; April, HP.....**BALS-5. 15¢**

BAPTISTA (bap-TEZ-ee-ah) False or Wild Indigo

Sturdy perennials growing to 6 ft. The foliage is deep green and attractive in the border; the flowers resemble Lupines in form and come in all shades of blue, white and yellow. Late in the fall the seed pods turn black and are thus rather showy. Seed can planted where the plants are to grow; easily grown; a rich soil best; hardy perennials.

—**australis**. Deep blue flowers; 3-4 ft; June-July; tallest species.....**BAPT-2. 15¢**

—**hybrids**. These come in varying shades of blue..... **BAPT-2H. 15¢**

BEGONIAS

This is a very large and varied group. Those that are popular pot plants in the greenhouse are mainly under B. semperflorens and grown for their flowers. About all of are very popular pot plants, both for flowers and foliage. All can be easily grown from seed as well as from leaf cuttings. The seed is very small and care must be used in handling them. Divided into 3 groups: fibrous rooted, tuberous rooted and rhizomatous.

SEMPERFLORENS: A dwarf compact grower; almost an everblooming plant and very popular both for bedding and for greenhouse pot plants. They come in many highly improved varieties and many beautiful colors. All grown as annuals.

—**Bedding Queen**. A dainty shade of rose; bronze foliage.....**BEG-2B. 40¢**

—**Christmas Cheer**. Attractive red.....**BEG-2C. 40¢**

—**Compacta**. Compact strain in many colors; a German strain.....**BEG-2CP. 40¢**

—**Erfordia**. A beautiful rosy carmine.....**BEG-2E. 40¢**

—**Glow**. Improved Fire Sea...Brilliant scarlet; dark foliage.....**BEG-2G. 40¢**

—**Gustav Knaake**. A strong grower; fiery crimson.....**BEG-2GK. 40¢**

—**Ile de France**. Pure white with yellow stamens; light green foliage.....**BEG-2F. 40¢**

—**King of the Blacks**. Dwarf, bright scarlet flowers; bronze foliage.....**BEG-2R. 40¢**

—**Prima Donna**. Limped rose shading carmine at center; everblooming **BEG-2PD. 40¢**

—**Salmon Queen**. A popular variety; salmon-red and dark foliage.....**BEG-2Q. 40¢**

—**White Beauty**. Pure white, light glossy green foliage.....**BEG-2W. 40¢**

—**Blend of the above listed varieties**.....**BEG-2X. 40¢**

SEMPERFLORENS GRACILIS: Compact and dwarf plants especially suited for GH.

—**Adeline**. Beautiful rose-pink; green foliage.....**BEG-3A. 40¢**

—**Indian Maid**. Bright scarlet; dark bronzy foliage.....**BEG-3M. 40¢**

—**Luminose**. A dandy scarlet-red and dark foliage.....**BEG-3L. 40¢**

—**Red Pearl**. One of the prettiest reds.....**BEG-3R. 40¢**

—**Rose Pearl**. Beautiful soft rose.....**BEG-3Z. 40¢**

—**Blend of above varieties**.....**BEG-3X. 40¢**

BEGONIA SPECIES:

—**Andean species**. Collected Begonias from Columbia.....**BEG-6. 30¢**

—**Andersonij**. Fls in an umbel at apex of tall spike.....**BEG-9. 30¢**

—**coccinea**. Fibrous rooted; large wax like coral red fls; Columbia.....**BEG-22. 50¢**

—**Evansiana**. Tuberous; 2 ft; stands some frost; fls flesh color.....**BEG-43. 40¢**

—**ferruginea**. Collected in Columbia.....**BEG-47. 30¢**

—**foliosa**. Fibrous; 1½ ft; fls white tinged rose; good basket type.....**BEG-48. 40¢**

—**gigantea**. Flowers small white or pale pink; good for pots or bedding.....**BEG-54. 30¢**

—**REX type**. Many foliage variations; popular foliage pot plant.....**BEG-117. 50¢**

—**Begonia Blend**. Contains all Begonias listed.....**BEG-X. 40¢**

—**tuberous rooted**. Beautiful strain of basket type; very good.....**BEG-158E. 50¢**

—**tuberous, Mixed**. A really high class strain in best colors and form..... **BEG-158EX. 50¢**

BELAMCANDA (bel-am-KAN-dah) Iridaceae

Iris-like perennials with stout root stalk, grown for their flowers and blackberry-like fruits which can be made up into pretty dried material. Easily grown in sun; sandy soil.

—**chinensis**. Blackberry lily; 4 ft; orange spotted red fls; HP.....**BEAL-1. 20¢**

—**ROOTS or DIVISIONS**: Mailed during September only 25¢ each; 6 for \$1.00 Postpaid

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN



RECOMMENDED GARDEN BOOKS

SEED AND POTTING COMPOSTS.

By Lawrence and Newell. Rev. 4th edition, 160 pp., 30 figs. 122mo., cloth. London, 1950. New in dust wrappers..... \$1.75

The authors are the developers of the standardized John Innes composts. Their book shows how those remarkable composts save time, reduce the hazards of raising difficult plants from seed and simplify proper potting on the seedlings or cuttings to maturity. Complete formulas and methods of preparation are given.

POPULAR ORCHID GROWING. \$1.75

This is of special interest to the amateur Orchid grower and covers the growing of these flowers completely. A more complete description will be given in the next book listing.

THE GARDEN FRAME. 184 pp., 8 pp. plates. 36 figs. in text. London (1947) \$1.50
How to start plants in the frame, wintering over, and all those problems connected with protecting plants and getting them started while the weather is still chilly.

THE A. B. C. OF BULBS AND CORMS.

246 pp., 16 pp. color plates, 20 line illus. London (1948) \$1.50. How to plant and care for bulbs; tells you when and what to plant.

AUSTRALIAN WILD FLOWERS. National Handbook No. 9, 32 pp. 23 illus. (16 in full color). Melbourne, 1944. Gives notes on garden cultivation and identification lists of 106 wild flowers. 75¢

PIONEER SEED COMPANY

Dimondale, Michigan, U. S. A.

DRY PINE CONES

Dry empty cones for ornamental use

Price per Bushel:

LODGEPOLE PINE\$2.00

PONDEROSA PINE\$1.75

BLACK SPRUCE\$2.50

YUCCA PODS\$1.75

PIONEER SEED COMPANY

Dimondale - Michigan.

SALVIA SEED

Now is the time for the greenhouse grower to lay in his supply of fresh SALVIA SEED. We have a good stock of fresh 1951 crop.

Per Oz. Lb.

AMERICA\$4.50 \$45.00

An early 18 inch variety. (Globe of Fire).

BLAZE OF FIRE5.00 60.00

Earliest, 12 inches; bright scarlet.

BONFIRE3.50 40.00

Compact 18 inch, early. (Clara Bedman).

HARBINGER4.00 45.00

Extra early, 16 inches; scarlet.

SPLENDENS3.00 35.00

Standard late tall scarlet.

ST. JOHN'S FIRE6.00 75.00

Extra early bright scarlet, 10 inches, uniform and compact; excellent strain.

ZURICH4.00 45.00

Early red; 18 inches.

¼ Oz. at Ounce Rate; ¼ Lb. at Lb. Rate.

Salvia should be held at around 60 degrees F while germinating; many failures are due to too cold a temperature.

PIONEER SEED COMPANY

Russell the Specialist

Continued from Page 161

shape.

It was impossible to confine the fame of this show, either to the allotment or to the town. Seedsmen from all over the country and from abroad began to arrive, offering \$50.00 for this plant or \$100.00 for that. But Mr. Russell turned them all down; he was not yet ready. Whatever his object was, it was plainly not gain. This jobbing gardener, who could have done with the money, was throwing away plants he could have sold for a small fortune, but because they did not satisfy the standard he had set himself!

He answered with the same shy stubbornness proposals made to him by firms who wanted to buy his creations root and stem. They reasoned with him; they pleaded posterity's cause. What would happen to the secret of his Lupins if he died? Ah, said Russell, he had thought of that. His neighbor's boy, Sonny Heard, a lad who had always helped him, knew all about them. In the end Russell was persuaded. He sold the lot to a firm in the Midlands, on the understanding that Sonny went with them.

Some growers work to scientific principles. If Mr. Russell did so, he seems to have been unaware of it. He once had a copy of Mendel's principles, but he had never studied it. He collected seeds from all over the world and, he says, "Me and Sonny spent hours on winter nights chipping Lupin seeds to make sure they would germinate." And most of the outdoor work, according to the old man, was done by bumble bees. A member of the Royal Horticultural Society's Floral Committee once said, "I do not know which other Lupin species Mr. Russell used in his work, but from the range of colors I suspect *Lupinus lexisiflorus*, *L. nootkatensis* and *L. subcarnosus* have all played some part." To such analysis, Mr. Russell reacts with a look of gratification touched with mild surprise.

The fact seems to be that Mr. Russell is a natural Mendelian, one of that long line of creative cultivators who in years (or, rather, in centuries) of painstaking hybridizing, the selection and re-selection, have evolved our garden flowers from the wild plants. It is a curious thought that some of our most beautiful and sophisticated flowers have been created by people in whom artistry is not otherwise apparent.

To-day, old Mr. Russell sits in the sun (this was written in 1950) outside the cottage he shares with Sonny at that nursery in the Midlands, looking out over dazzling acres of Lupins which even Dutchmen confess outshine their tulip fields. The firm who bought the Russell Lupins thought the old man might still feel inclined to putter with his plants; there was work to be done on the Columbine, for example. But old age now holds him to his chair and he is content just to sit, especially in June when the wind can bring him the scent of his Lupins.

His pioneering plants have now been taken beyond the stage of development he reached with them on his allotment. But the catalog still carries his original flowers. There is the "Mrs. Micklethwaite" in salmon-pink, the bright red "City of York", the "Sonny" in cerise, and a coral pink bloom that he chose to carry his own name: Their names are a memorial to the loyalties of an entirely satisfactory life.

The above is from THE OBSERVER and published Sunday, June 18, 1950 and thus before Mr. Russell's death this Oct. 15th.

BRODIAEA - BROWALLIA

BRIZA (BRY-zah) Quacking Grass Ornamental Grass

Quacking Grass. Ornamental grasses grown for bouquets, dried or for specimen plantings. Sow seed early in spring in average garden soil; easily grown.

- maxima. To 2 ft. HA..... BRIZ-1. 15¢
—minor. To 18 inches, HA..... BRIZ-2. 15¢

BRODIAEA (broh-di-EE-ah)

Hardy on West Coast and in the South; in North they can be grown in RG with good winter protection. Excellent for naturalizing; dislikes wet situations

- californica. Violet-purple fls; 1 ft., Calif; HP..... BROD-2. 25¢
—capitata. (Now *Dichelostemma pulcellum*). Earliest, light blue, HP..... BROD-3. 25¢
—Hendersonii. Fls. striped brown in heads, RG, 6 in., HP..... BROD-7. 25¢
—cruttii. San Diego Wild Hyacinth..... BROD-9. 25¢
—puchella. Erect heads, clear blue, 2 ft, sun, HP..... BROD-11. 25¢
—Brodiaea Blend. Blend of all species..... BROD-X. 20¢

BUDDLEIA (BUD-lee-ah) Butterfly Bush

Butterfly Bush. Dicotyledonous or half hardy evergreen sh. or trees, a few hardy in the N. Grows rapidly, free bloomers, easy from seed, grow on in frame first year.

- asiatica. Tender, flowered in GH in W from sd sown in sp; white..... BUDD-2. 25¢
—globosa. Orange-yellow fls; striking, 15 ft. BUDD-9. 25¢
—Davidii. Summer Lilac. Lilac with orange eye, 10" spikes; 15 ft; HSh..... BUDD-7. 25¢
—New Garden Forms. Beautiful strain..... Oz. \$1.00. BUDD-7N. 35¢
—Colvillei. Tender sh. dense spikes of purple fls; 15 ft. BUDD-5. 25¢
—japonica. Lilac fls in drooping 8" panicles; 6 ft; HSh; Japan..... BUDD-11. 25¢
—intermedia. Hybrid, violet fls in drooping panicles; TSh..... BUDD-10. 25¢
—Buddleja Blend. A blend of both varieties and species..... BUDD-X. 25¢

BULBINELLA (bul-bi-NEL-ah)

Perennial plants from New Zealand and S. Af. Fleshy tuberous roots, grass-like leaves, yellow or white fls in dense clusters at end of bare stems. Plant in RC or border, not hardy in N.

- Hookeri. Bright yellow fls in 10" racemes; 2ft; TP..... BULB-1. 25¢

BULVSANTHUS speciosus..... BULV-1. 25¢

BUPHTHALUMUM. (bewf-THAL-mum) OX-EYE. Compositae.

Showy herbaceous perennials, 3-4 feet high with large heads of yellow disk or ray flowers. They are easy to grow and suitable for the border; hardy well up into the North; may flower the first ear if started early.

- salicifolium. Neat border plant; yellow fls; root runner; 2 ft; HP..... BUPH-23. 20¢

BUXUS. (BUX-us) BOX. Buxaceae.

Evergreen shrubs extensively used as hedges. They stand shearing well and thrive even in partial shade; they are slow growers a good point for hedges.

- sempervirens. Common Box. Grows to 25 ftLb. \$3.25..... BUX-5. 25¢

BROMELIADS: Seed collected in Columbia; no species name..... BROM-1. 25¢

BROWALLIA (broh-WALL-e-ah)

Free flowering half hardy annuals, 1-1½ ft. tall, excellent bedding plants, set at least 6 inches apart. The blues are intense. Sunny locations, good soil, start seeds early indoors for early plants. Also good winter pot plants.

- speciosa major. 5 ft. fls deep blue, 2 in. ac. used in hanging baskets.....EROW-3. 20¢
—viscosa compacta v. Sapphire. Compact; dark blue, white eye; 9"; pots BROW-4S. 25¢

BRUCKENTHALIA (bruk-en-THAL-ya)

A single species very closely related to the Heaths and requiring same culture.

- spiculifolia. Fls racemes, very small bell-shape, pink, red berries, HP.....BRUC-1. 25¢

BRUNNERA. (BRUNN-er-ah) Boraginaceae.

Similar to Anchusa, native of Siberia and E. Med. regions. They are small herbaceous plants.

- macrophylla. Blue fls ¼" ac; Caucasus; 1½ ft; HP..... BRNN-1. 15¢

BRUNSFELSIA (brun-FEL-zi-ah) Greenhouse Plants

Tropical shrubs and trees grown in GH but out door in far S. Attractive plants for pots. Rich soil, night temp. 50 degrees.

- americana. To 8 ft. fls white, very frag. at nite, TP.....BRUN-1. 25¢

CACTUS

Popular name for many desert growing plants. They vary much in form and size, most of which are not hardy in the N but grown in pots indoors. The hardy sorts must be perfectly dry in the winter and should be covered with glass to keep soil dry. To germinate seed, sow in pot of light soil, and keep inside; they require from 20 days to 4 months, grow on in pots, always watering from below and not too freely.

- cereus. Mixture of S. A cereus, fast growing, white fls; nite blooming.CACT-1. 20¢
—Strawberry Cactus. Clumps, 4 inches tall in 2 years.....CACT-2. 15¢
—Barrel Cactus. Scenic desert plant; to 6 ft; white.....CACT-3. 15¢
—Cactus Blend.....CACT-X. 15¢

CALANDRINIA. (kal-an-DRIN-ee-ah) Portulacaceae.

Low growing fleshy plants, grown as annuals in the rockery or for edging. Flowers orange-yellow and coppery rose to brick red or crimson magenta. Best in sunny spot.

- ciliata v. Menziesii. Red Maids. Crimson fls; erect; HA..... CALD-4. 20¢
—umbellata. Scarlet fls; to 6 in; Peru; 1HA..... CALD-8. 20¢

Explanation of the headings. The headings for each genus, starts with the genus name, *Mirabilis*, followed by the pronunciation; next in capitals as **FOUR O'CLOCKS**, are the common names, if any; then the family to which it belongs, always ending in eae, which will help many flower growers in classifying many of its requirements. The figures in brackets as (*15 days) are the days required for a normal germination and the star * before, if present, means that the time is variable but germination can be looked for at the time indicated; star alone means no definite time and it could be a year.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

A Man and his Flowers

George Russell, of the Lupins, stood at the head of that lengthening line of working men gardeners who have raised on humble plots some of the showiest flowers in cultivation. Behind the magnificent new Delphiniums of to-day are such men; and an improved dwarf Chrysanthemum now adorning thousands of English gardens came from a cottage grower not twenty-five miles from the York allotment where the Russell Lupin first raised their amazing spires above the

that range of yellow and orange, strawberry red, purple and gold, apricot and sky-blue, and other hues which banished for ever the old-fashioned blue Lupin with its anaemic spike. In the home garden it is a very different matter; there the self-sown Russell Lupin seedlings readily spring up on neglected borders to bear flowers showing all the faults of promiscuous crossing. If there happen to be a few of the old blues lingering within bee range, than the ruin may be

Russell Lupins change or revert. This is not the case, however, for in growing Lupins for many years and in large quantities, I cannot recollect a plant sporting or changing color, and can only assume the idea has spread through the original plant having died and a chance seedling of another shade came up in the same position.

It is quite likely that such seedlings may be the common blue or other nondescript shades, as rarely go far without seeing an odd patch of the old fashioned blues and if pollen is carried to a bed of the Russells, the quality of the seed naturally deteriorates.

FLOWER CLUBS

By Walter Welch, Ind.

Every organization, whether a Garden Club or specialized Society, is interested in the problem of securing and holding their membership. It is of vital importance to them in the development of their special flowers and in offering better service to their membership. How many of you readers belong to a Flower Society? If you don't, you are missing a great deal of benefits and pleasures.

My speciality, of course, is the American Iris Society and the Dwarf Iris Club. For several years I plodded along, growing Iris, making my futile crosses, lacking encouragement, companionship, the thrill of the meetings and tours, discussions with fellow hybridizers and the Bulletins and special literature on the subject. This is all part of a dull, dim past now, for at present I am part of these organizations, active in their programs, with friends, recognition, knowledge, reasonable accomplishments and a devotion to the welfare of my fellow members, hitherto unbelievable. All the results of association with other members of our Society.

It has been our experience, as with others, that we enroll many members and in a year or so several will drop out, with the excuse that "I didn't get much out of the Society". Of course the logical answer here is, "Just what did you PUT INTO the Society?"

If you paid your dues and then sat at home, for others to come to your garden, with no attempt to partake of the many activities and benefits afforded by the Society, you probably were disappointed, and received only their Bulletins, which alone I consider well worth the price of the dues.

If you belong or contemplate joining any Flower Society, you must have some reason for joining. Do you wish to emerge from your seclusion, to learn what others are doing and have achieved, to keep up to date on recent developments, to see other's collections and have them visit your plantings, to know the hybridizers and discuss your problems with them, to correspond with mutual enthusiasts all over the world, attend the meetings, perhaps take part in them, secure important friendships or even satisfy that desire for personal glory and recognition.

Practically anything you wish can be accomplished through your EFFORTS, in conjunction with the opportunities offered by your Society. Most Societies stage an Annual Meeting, and this is usually such a grand display with Show, Banquet, Speakers, Special Plantings, Famous Gardens, and excellent entertainment that having once attended, it is impossible to refrain from making it a regular schedule. Then there are the Regional Meets, the Fall Luncheons, local groups and tours, to fit the requirements of most any member. If

Continued on Page 174



George Russell and his Lupins

fence to dazzle passers-by. Russell, the jobbing gardener, did more than simply improve. He filled his long years of retirement with the splendid achievement of creating, like Spencer with the Sweet Peas, a new race of flowers which must have put more bold gait into the parks and gardens of the world than any other introduction in horticultural history. A statesman might well envy a man who could be so sure his good work would grow on after him.

Russell never quite knew how he did it. At ninety-three, when old age held him to his chair, he would sit in his sunny porch and admit that his copy of Mendel's principles was still on his bookshelf unread. If his plants had indeed *Lupinus leucophyllus*, *L. nootkatensis* and others in their ancestry, as the experts solemnly suggested, then the old gardener never indicated it by so much as a twinkle of the eye. He had heard of an annual Lupin in Germany with the flower characteristics he desired, he sent for seed and raised plants, and when he wedded these annuals to the blue perennial, his main aids seem to have been intuition and the bumble bees. Whatever happened, the miracle of the Russell strain with its fat, globular "keel" and petals expanded like a butterfly's wings, was accomplished. Russell well knew the weakness of his new race, that annual strain with the pretty colors, with its threat of mortality - and he spent many years rigorously selecting and re-selecting to try to ensure greater longevity. He never fully succeeded, as anyone with long experience of these plants knows.

The commercial future of his Lupins was assured when his original stock was taken over by a concern whose experts have since developed on Russell's foundations

swift and complete, for a nondescript band of degenerate foundlings arise to replace the splendour of the ageing original plants. The bees that helped Russell to create can destroy, too, as they employ the shining hours muddling the floral colors of suburbia.

Note: The above appeared in THE TIMES on October 1, 1951.

When and Where to Plant Russell Lupins

The Russell Lupins can be grown successfully in almost any soils, except those containing an excess of lime, but the position should be well drained and they prefer a sandy or gravelly loam.

They do not like humus and no kind of manure should be used when the bed is prepared, nor should it be dressed with lime, as they give better results in a slightly acid soil. An open sunny position is ideal, but they do quite well in slight shade, provided they are not placed under, or too near, overhanging trees.

Lupines are accommodating plants and draw a great part of their nourishment through the foliage, but if the ground is poor it can be given a dressing of bone meal at the rate of 4 ounces to the square yard, with advantage.

Spring planting of the roots is probably advisable in most districts but in light well drained soils, they can be planted successfully in the late Autumn.

The desire for "self colors" in the Russell Lupines is hard to fulfill as there is a slight variation between standards and bells in every Lupin.

It is thot by some that the colors of the



AURELIAN HYBRID LILIES

FLOWER CLUBS AND SOCIETIES

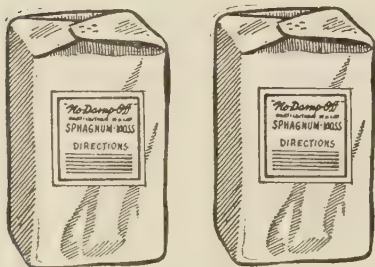
Continued from page 173

you are unable to attend these affairs, there are still such things as Round Robins, correspondence with other members, articles to be written, organization of local Clubs, in fact there is plenty to do if you are inclined to help.

By all means, everyone who is interested in flowers should expand their vista, broaden their knowledge and contacts, and greatly increase their pleasure, by joining their flower Society and then become active in SOMETHING INTO the Society.

Editor's Note: Mr. Welch has given a good sales talk for Garden Societies and Clubs, and I think it should be finished by giving a little more information and as he is especially interested in Iris and is writing a column in SAIER'S GARDEN MAGAZINE each month. Those interested in joining the American Iris Society should address them at 444 Chestnut Street, Nashville, 10, Tenn.

SPHAGNUM FOR GERMINATING



It is simply impossible to germinate many seeds without the use of milled sphagnum moss. If you were over your seed pans all day long as the professional grower is you may find you could get along without it, but no professional grower would fail to have the fine moss on hand. It will save many a packet of valuable seed from loss due to an hours neglect, that cannot be avoided by one having other duties.

BUSHEL BAGS: \$2.25, postpaid. This will last the average grower a year.

PIONEER SEED COMPANY
Dimondale, Michigan.

CALENDULA - CALLIRHOE

CALENDULA (kal-LEND-yew-lah) Cool weather plants

Definitely cool weather flowers and in the S should be sown in the fall. They like full sunshine but do not take well to burning sun of summer. In the N start indoors or pr plant in the open as soon as weather is settled. Select the right varieties for out doors or for GH growing. Grow about 2 ft high; all HA.

Following all C. officinalis:

- Amber Glow. Long stem; amber-yellow with dark center.CALN-7A. 15¢
- Apricot Queen. A beautiful apricot color.CALN-7AQ. 15¢
- Ball's Extra Double. Free flowering, bright double orange, GH.CALN-7BD. 20¢
- Ball's Gold. Deep golden yellow, GH.CALN-7BG. 20¢
- Ball's Masterpiece. Clear orange with dark center, GH.CALN-7BM. 20¢
- chrysanthia. Large clear buttercup-yellow.CALN-7C. 15¢
- Campfire. Large brilliant orange with lemon sheen, very good.CALN-7CF. 15¢
- Corniche d'Or. Pretty golden yellow.CALN-7CO. 15¢
- Frilled Beauty. Double orange fls with frilled petals.CALN-7FB. 15¢
- Hollandia. Extra double deep orange; long stems; excellent cut.CALN-7H. 15¢
- Indian Maid. NEW, Pale orange with distinctive maroon eye.CALN-7NM. 15¢
- Jewell. Deep orange, full double, semi-dwarf; fine bedder.CALN-7J. 15¢
- Lemon Queen. Pretty sulphur-yellow; flat head.CALN-7LQ. 15¢
- Le Proust. Nankeen yellow and an excellent type.CALN-7LP. 15¢
- Mammoth Orange. Best extra large deep orange.CALN-7MG. 15¢
- Market Tangerine. Deep tangerine orange.CALN-7MT. 15¢
- Meteor. Double orange with yellow stripes; different.CALN-7M. 15¢
- Orange King. Florist strain; reselected; double orange; long stems.CALN-7GK. 15¢
- Orange Fantasy. A crested type in orange; different.CALN-7GS. 15¢
- Sunshine. Golden yellow; curled petals; long stems, good for cut fls.CALN-7S. 15¢
- Radio. Double quilled petals; orange-scarlet; pretty.CALN-7R. 15¢
- Radio Golden Beam. Pure golden yellow; curled petals.CALN-7RG. 15¢
- Tip Top. An excellent Holland strain for outdoor planting.CALN-7TT. 15¢
- Yellow Colossal. Large Chrysanthia type but more double.CALN-7YC. 15¢
- Florist Varieties Mixed.Oz. 50¢; ¼ lb. \$1.00.CALN-7FX. 15¢
- Mixed Ari Shades. Pastel shades.CALN-7A. 15¢
- Special Market Strain. For outdoor growing; excellent; Oz. 30¢.CALN-MX. 15¢
- Garden Varieties Mixed. For outdoor growing.Oz. 40¢; ¼ lb. 75¢.CALN-7GX. 15¢

CALCEOLARIA (kal-se-oh-LAY-ri-ah)

A very large genus from C. and S. Am. of creepers, plants and shrubs. All have pouch or slipper-shape fls usually in yellow, often with dots and splashes of other colors. Many are GH plants nor hardy in the North.

- crenatifolia. GH, yellow with orange-brown spots; TP.CALC-4. 25¢
- Dippe's Pansy-flowered. NEW type from Germany fls double pouched and in the most beautiful color combinations. No florist should miss this.CALC-4D. 50¢
- grandiflora tigrina. Finest strain of tigered fls; TP.CALC-9. 30¢
- herdeohybrida. (Perfect Model.) Form of C. crenatifolia, TP.CALC-10. 40¢
- mexicana. Annual species; small yellow slippers, 1 ft HA.CALC-16. 20¢
- Florist Small Flowered Strain. The best strain obtainable.CALC-10F. 50¢
- Florist Mixed. All florist type mixed for general use.CALC-FX. 50¢

Calla Lily: see Zantedeschia.

CALIFORNIA POPPY: see Eschscholzia.

CALLICARPA. (kal-lik-KARP-ah) BEAUTY BERRY. Verbenaceae.

Shrub and trees having attractive small pink, bluish or wwhite flowers in axillary clusters followed by attractive berry-like fruits. They are hardy into the North.

- americana. French Mulberry. Fls bluish; not hardy in N; 6' Lb \$3.50.CALE-1. 25¢

CALLIOPSIS (kal-lee-OP-siss) The annuals in Coreopsis

Only the annual sorts are listed here. The perennials will be found under Coreopsis. These are hardy annuals; make fine display in the flower border and are excellent for cutting. Sow seed early in April where they are to grow and thin to 6 inches if you want a strong growth. There make excellent cut flowers.

- DRUMMONDI: Most of the garden sorts belong to this species. Golden Wave. Annuals to 2 ft. flower heads 2 inches across on long stalks; flowers in rays; easy.
- Golden Crown. Crested rich golden yellow.CALP-7GN. 15¢
- Golden Wave. Pure yellow with dark brown center; pretty.CALP-7GW. 15¢
- Semi-dwarf, Mixed. Plants 2-2½ ft. in all colors.CALP-7DX. 15¢
- Tall Varieties Mixed. Double and semi-double fls fine garden strain.CALP-7TX. 15¢
- bicolor marmorata. Bright golden marbled with wallflower-red.CALP-25M. 15¢
- Crimson King. Dwarf; red flowers.CALP-7CK. 15¢
- Golden Ray. Dark purplish brown center; broad golden petals; dw.CALP-7GR. 15¢
- nigra speciosa. Quaint reddish maroon flowers.CALP-7N. 15¢

TINCTORIA: These showy border plants, fine for cutting; rays yellow, crimson-brown at base and disk brownish purple; HHA, 1-2½ ft.

- Bicolor nana. Dwarf growing in golden yellow and crimson.CALP-6BC. 15¢
- Bicolor Hybrids. Double fls in many colors.CALP-6DX. 15¢
- bicolor. Yellow and brown fls; 2 ft.CALP-6CB. 15¢
- Dazzler. In rich brilliant colors; 9 inches.CALP-6D. 15¢
- Tiger Star. Rich bronze, striped and mottled yellow, 1 ft; pretty.CALP-6TS. 15¢
- Mixed Tinctoria Varieties.CALP-6X. 15¢
- Dwarf Mixed. Finest varieties on dwarf plants; 18"; HA.Oz. 35¢.CALP-DX. 15¢
- Calliopsis Blend. A blend of all the annual sorts.CALP-X. 15¢

- cardaminefolia. Bicolor fls, yellow and brown, 1' ac; 2 ft; HA.CALP-8. 15¢
- nueceusis. Yellow rays, dark lined, heads 2" ac; 2 ft; HHA.CALP-18. 15¢

CALLISTEPHUS: see Asters.

CALLIRHOE (kal-LIHR-oh-ee) Poppy-mallow

Poppy Mallow. N. A. annuals and perennials, picturesque lobed foliage and showy flowers in pink, red or reddish purple, long in bloom; thrives in poor and dry soils.

- involutrata. Wine Cup. Claret crimson, cup-shape; June-Sept; 30"; HP.CALI-2. 20¢

CALLUNA (kal-LEW-nuh) Heather

The true hardy Heathers, they are adapted to cover dry sunny slopes; lime free soil.

- vulgaris. Rosy pink fls, 2 ft; in late summer HP.CALL-1. 30¢
- alba. The best white variety.CALL-1W. 30¢
- St. Patrick. Red-brown fol; 4-6 in tall; Aug-Sept.CALL-1S. 40¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

CALOCHORTUS - CAMASSIA

CALOCHORTUS (kaloh-KORT-us Mariposa-lily, Globe Tulip)

W. Am. plants of Lily F. forming corm and bearing bell-shaped lilac, yellow or white flowers. They are known under the names Mariposa Tulips, Butterfly Tulips, Globe and Star Tulips, Sego Lily and Fairy Lanterns. Of great beauty; hardly in the N but should be protected against winter heaving. Sunny places; light soil; well drained; raised beds should be ideal; handle bulbs much as you would Tulips.

—albus. Fls white, purplish at base; 2 ft tall; HP.....	CALO-2.	20¢
—concolor.....	CALO-12.	30¢
—hybrid. A possible hybrid of C. concolor and Weedii.....	CALO-21.	25¢
—Hybrida superba. Excellent strain of bicolor hybrids.....	CALP-6HX.	15¢
—luteus v. citrinus. Lemon yellow with dark brown spot; 2 ft; HP.....	CALO-23C.	25¢
—macrocarpus. Lavender; 10 in. tall; June-July HP.....	CALO-25.	25¢
—Maweanus. Best of genus; lavender RG; 4 in early spring; HP.....	CALO-26.	30¢
—splendens. Lilac Mariposa; Calif; 2 ft; HHP.....	CALO-38.	25¢
—Weedii. Yellow dotted with orange-brown; 2 ft; HP.....	CALO-46.	25¢
—Calochortus Blend.....	CALO-X.	20¢

CALPURNIA (kal-PUR-ne-ah)

Trees and shrubs; flowers in racemes, native of S. Af. and grown out doors in S and GH in N. They are ornamental.

—aurea. Af. Laburnum. 15 ft; yellow fls.....	CALU-1.	30¢
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CALTHA...(KALTH-ah) Crowfoot Family

Small succulent perennials thriving in marsh land near running water but can be grown in moist sections of the garden. They are especially nice near water gardens blooming in the spring and often again in the fall. Long lasting when cut.

—biflora. White buttercups; RG or bogs, in full sun, HP.....	CALT-1.	30¢
—pulstris alba. Rare pure white form; 2 ft; HP.....	CALT-5A.	40¢
—leptosepala. Similar to C. bicolor; 4 inches high; HP.....	CALT-4.	25¢
—scaposa. Seeds collected in India.....	CALT-8.	20¢

CAMASSIA ka-MASS-ee-ah) Camass

N. Am. bulbous plants of the Lily Family. Blue and white flowers in graceful racemes and narrow grass-like foliage. Perfectly hardy; plant in groups.

—esculenta. Erect spikes of pale blue; cuts; 2 ft; HP.....	CAMA-3.	25¢
—Leichtlinii. Pretty purple to creamy white; 1½-2 ft; HP.....	CAMA-6.	25¢
—Quamash. Blue fls; 18 in. tall; May; fine.....	CAMA-7.	20¢

CAMPANULA (kam-PAN-yew-lah) Bellflower, Canterbury Bells

(kam-PAN-u-lah) Canterbury Bells; Bell Flowers; Harebell. Biennials, perennials and a few annuals. They are excellent for the border, some species for the rock garden and all make good cut flowers. All the biennials and perennials can be started from seed, sown indoors in March and set outdoors in May or June or they can be started about July. A covering of leaves is good for winter protection. The seed being small, it will be well to scatter them on a good light loam, press into the soil lightly and cover.

MEDIUM: Canterbury Bells; Single, 3 ft; June-July; HB
Canterbury Bells. (C. medium). Biennials, flower June-July; 3 ft; HB.

—Blue.....	CAMP-1B.	15¢
—Lilac.....	CAMP-1L.	15¢
—Rose.....	CAMP-1Z.	15¢
Blend of above colors.....	CAMP-1X.	15¢

DOUBLE FLOWERED CANTEBURY BELLS: 2½ ft; HB.

Rose.....	CAMP-2Z.	15½¢
White.....	CAMP-2W.	15¢
Blue.....	CAMP-2B.	15¢
Dean's Hybrids. Double and Single.....	CAMP-2XD.	20¢
Blend of all colors.....	CAMP-2X.	15¢

CALYCANTHEMA: Cup and Saucer; 2½ ft; HB

calycanthema, White.....	CAMP-3W.	15¢
—Blue Sky blue; single.....	CAMP-3B.	15¢
—Rose.....	CAMP-3Z.	15¢
—Lilac.....	CAMP-3L.	15¢
—Double and Single, Mixed.....	CAMP-3XD.	15¢
—Blend of all colors and shades.....	CAMP-3X.	15¢

Campanula Species:

—campanulata v Moesiaca. Collected in Austria.....	CAMP-18.	25¢
barbata. Distinct, pretty, porcelain blue; 1 ft; HP.....	CAMP-13.	25¢
carpatia. Blooms all summer, erect fls, blue; July-Aug; 1 ft; HP.....	CAMP-20.	15¢
—furbinaia. Erect cup-like, light blue fls, neat RG; 6"; HP.....	CAMP-20T.	25¢
—White. Pure white; single.....	CAMP-20W.	15¢
collina. Deep blue fls, neat dwarf RG, 8"; HP.....	CAMP-25.	25¢
drabifolia. 6 inch annual, fls blue with white tube, HB.....	CAMP-29.	30¢
Elatinus v. garganica. Trailing species, blue fls, very nice, HP.....	CAMP-30G.	25¢
Formanekiana. Erect, large showy white fls; lvs silver-gray, 8"; HP.....	CAMP-37.	25¢
fragilis. Tr. fine for hanging baskets; fls blue, white centers, 16"; HP.....	CAMP-38.	25¢
glomerata. Blue or white, in dense clusters; 2 ft; HP.....	CAMP-39.	30¢
—incurva. Erect; pale blue fls 2 in. long; Greece; HB?.....	CAMP-42.	30¢
latifolia. Very large blue fls; excellent; 3 ft; HP.....	CAMP-51.	20¢
—alba. A white form of above.....	CAMP-51W.	20¢
—macrantha. Large deep violet fls; showy in border; 2 ft; HP.....	CAMP-51M.	20¢
longestyla. Large nodding blue-purple fls; 18"; HB.....	CAMP-57.	25¢
persicifolia. Large blue fls; very pretty; 3 ft; HP.....	CAMP-71.	20¢
—Ladham's Strain. Giant flowered strain.....	CAMP-71L.	25¢
—Princess Royal. Deep blue variety.....	CAMP-71R.	25¢
—alba. Pretty white form of above; HP.....	CAMP-71W.	20¢
Poscharskyana. Lovely pale blue s; July, 4"; HP.....	CAMP-78.	25¢
punctata. Many fls, white, spotted inside, 2 ft; HP.....	CAMP-86.	25¢
pyramidalis. (Chimney Bellflower). Fine for border; pale blue; 3 ft; HP.....	CAMP-87.	20¢
rapunculoides. Vigorous persistent invading sp; fls violet-blue; 3 ft; HP.....	CAMP-95.	25¢
Rock Garden Sorts. Low growing types.....	CAMP-100.	25¢
Rapunculus. Lilac-blue fls in narrow racemes, 3 ft; HB.....	CAMP-96.	15¢
rotundifolia. (Harebell) Slender, graceful habit; fls pale blue; 1½ ft HP.....	CAMP-99.	15¢
—superba. Large flowered strain; 2 ft; HP.....	CAMP-99S.	20¢
—Olympic. Large beautiful deep lavender fls; 2 ft; HP.....	CAMP-99P.	20¢
thyrsoides. Erect, very leafy; fls yellowish, in spikes; 2 ft; HB.....	CAMP-121.	25¢
Tommasiniana. Fls nodding, violet; stem not upright; 1 ft; HP.....	CAMP-122.	20¢
Trachelium. Blue-purple fls, nodding, in loose racemes; 3 ft; HP.....	CAMP-124.	45¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

DAFFODIL BULBS QUARTER OFF!!

Due to the early cold weather here in Michigan this fall and also shortage of field help, we will allow a 25% discount from the following prices while our stock lasts. This is an excellent opportunity to make a mass planting of these beautiful varieties. It will be well to state second choice when ordering and on orders amounting to \$5.00, we will include a liberal amount of Scillas.

KING ALFRED. One of the finest of all the Yellow Trumpets; excellent for both forcing or the garden; large trumpets, a golden yellow and deeply frilled.
 3 large bulbs, 30¢; Doz. \$1.00; 100, \$8.00

HELIOS. Deep golden yellow perianth, semi overlapping, cup opens a little darker than the petals and in a cool climate gradually changes to a light orange.
 Large bulbs: 15¢; doz. \$1.00; 100 \$8.00

DAISY SCHAFFER. One of the best of the new Giant Leedsii type, the flowers are 4½ inches across with cups nearly 2 inches resembling a Giant Trumpet but much more graceful in form; perianth white with cup opening primrose and turning to light canary-yellow, deeper at the base; long lemon-yellow stigma and styles add to the color harmony of this remarkable flower.

Each; 25¢; doz. \$1.75; small planting size, \$8.00 per 100.

SCARLET ELEGANCE. One of the first to bloom in the garden; has a deeply color-scarlet crown; perianth deep yellow; very fine for cut flowers;
 Each: 20¢; doz. \$1.25; 100 \$9.00.

TWINK. Charming pale primrose flushed white, center deep orange-red; it is an easily grown variety and excellent in every way and probably best of the double Narcissus.

EACH 20¢; dozen \$1.50; 100, \$11.00

CHEERFULNESS. A double form of Elvir-a, creamy white perianth with a full double center of pale yellow; a Tazetta Narcissus; strong grower.

Each, 20¢; dozen \$1.00; 100, \$8.00

GERANIUM. A beautiful Poetaz hybrid with heads of 4-6 flowers per stem, with broad pure white petals of solid substance; a bright orange cup; an effective late variety for the border or forcing after middle of February.

Each, 20¢; dozen \$1.10; 100, \$8.50

REMBRANDT. A very early large golden yellow trumpet of lovely carriage; petals are flat, broad and somewhat pointed and a large expanded trumpet, nicely flanged at mouth; showy variety for both the garden or for pots; a vigorous grower.

Each, 20¢; dozen \$1.30; 100, \$9.00

FEBRUARY GOLD. A Poeticus Narcissus with lovely golden yellow trumpets. It should be planted in the rockery for a very early display for it blooms first of all the varieties we have grown.

Each, 15¢; dozen \$1.00; 100, \$9.00

NOTE: 3 bulbs of a kind at the dozen rate and 25 of the same variety at the 100 rate.

SPECIAL COLLECTION: One large Bulb of each of the above nine varieties for \$1.50, postpaid; 3 each for \$3.50; post paid.
 Each: 20¢; dozen \$1.50; 100, \$9.00

PLANTING SIZE NARCISSUS. Small size bulbs that will produce large bulbs next year; 25 of a kind at the 100 rate; no less than 100 sold. Prepaid.

KING ALFRED.....	\$5.00
REMBRANDT.....	6.00
SCARLET ELEGANCE.....	5.00
CHEERFULNESS.....	4.50
GERANIUM.....	4.00

PIONEER SEED COMPANY
 DIMONDALE, MICHIGAN

George Russell and the Bakers

Following are a few remarks written by Mr. J. B. Baker, who is a member of the firm to whom Mr. Russell entrusted his stocks of Lupins, in 1935, when he became too old to attend to the increasing amount of work and when he had decided to release his strain for general distribution.

When we first came in contact with Mr. Russell, he was what is known over here as a jobbing gardener, earning a living by looking after one or two gardens in York and devoting all his spare time to the cultivation and development of his Lupins on two allotments near the Race Course at York.

He was then around about eighty and had been working on his Lupins for twenty years.

The Observer had a comprehensive and well written article, in 1950, and is probably the highest honor ever paid to a horticulturist by the press, as this series has covered some of the greatest personalities of our time.

His work received public recognition in the New's Honor List this year when he was awarded the M. B. E. and when he died on October 15th. last, practically every well known paper throughout the country paid him a glowing tribute of which possibly the most impressive was the one which appeared on the "Leader" page of the Times.

Mr. Russell set a wonderful example to gardeners in all parts of the world.

Editor's Remarks: For some time we have had in mind to give publicity to gardeners and plain flower growers, who have found pleasure in not only growing flowers but who have also improved them when under their care. The list is altogether too small! And, thus it is our purpose to give credit to the comparatively small number that we have information of.

The reward in dollars, usually will be small but there is the pleasure and satisfaction one has in being able to better the things he is working with.

A year or two ago, Dr. L. H. Bailey paid us a short visit and at the time was making plans to fly to Central Africa on some work on Palms at the request of the English! Mr. Bailey is over 80 and like Mr. Russell, they both are young at the age when the majority of men at really old; an interest in ones work and a something to finish, keeps one from getting old before his time and especially is this true when the interest is in horticultural matters.

FROM TENNESSEE

Mr. Kincher W. Exum, Department of History, in the McCallie School Missionary Ridge, Chattanooga, writes how impressed he is "with the excellent articles and coverage and I have never seen a wider variety of seeds offered".

Mr. Exum suggests that we advertise our magazine in southern newspapers. It does not pay, Mr. Exum! We have tried it many times, the last was in the N. Y. Times, at a cost of over \$10.00 per return! The most prompt answer was from the advertising department of the Herald-Tribune, which wired us two days BEFORE the ad was to be published! It would have been better if we had put the \$50.00 into plates for own paper for our biggest increase in circulation comes from our readers.

GET EVERY ISSUE — \$2.00 PER YEAR

CAPSICUM - CARTHAMUS

Campanulas continued from last Page

—*trachelium album*. White nodding fls in loose racemes; 3 ft; HP.....CAMP-124W. 30¢
—*sarmatica*. Very distinct dwarf sp; erect, violet nodding fls; 1-2 ft; HP CAMP-103 25¢
—*Sartori*. Fls white, narrow bell-shaped; 10"; HPCAMP-104 25¢

CANDYTUFT: See Iberis.

CANNA (KAN-noh)

Tropical summer flowering plants growing from thick fleshy tuber-like roots. Valued for both their tropical appearing foliage and their brilliant flowers. Range from 2-10 ft. tall and should be grown as an annual in the N. File notch in seed and soak in warm water over night; start early in spring.

C. FLACCIDA: The commonly grown foliage plant.
—Crozy. Dark leaved sorts in vivid pink, red, yellow and orange; TP.....CANA-1C. 20¢
—New Giant Hybrids. A Holland strain in several colors.....CANA-1H. 20¢
—Mixed. All strains mixed.....CANA-1X. 20¢

CAPSICUM (KAP-se-kum) Pepper

Under this are listed mainly the ornamental peppers. They are grown mainly as pot plants; require warm temperature, sun and fairly rich soil.

—Little Gem. Small garnet colored fruits; pot plant.....CAPS-1G. 25¢
—Prince of Orange. Small orange colored fruits; pot plant.....CAPS-1P. 25¢
—Tom Thumb. Small plant with miniature red fruits.....CAPS-1T. 25¢
—Miniature, Mixed. Small plants mixed varieties.....CAPS-1MX. 25¢
—Blend. All types and varieties.....CAPS-X. 20¢

CARICA (KAY-rik-ah) Papaya

Tropical trees with melon-like fruits; grown only in the far South.

—*cundinamaricensis*.....Collected in Columbia.....CARI-2. 30¢

CARDIOSPERMUM (kar-ee-oh-SPERM-um) Heart-seed

Hardy annual and perennial vines excellent for covering fences or trellises; grow to 10 feet. The seed pods are inflated like balloons. Best to sow seed where they are to grow or start indoors; light soil and sheltered spot best.

—*Halicacabum*. Ballon vine.....Soak seed, they require to 40 days to germ.....CARD-3. 20¢

CARDUUS. (KAHR-deu-us) Plumeless Thistle, Silybum.

Vigorous, robust, spiny-leaved annual and perennial plants with purple tubular flowers, very striking in both flowers and foliage, some being very ornamental. Grows well in ordinary soil.

—*benedictus*. Blessed Thistle. Lge. yellow heads; sow April; 2 ft, HA.....CDUS-2. 20¢
—*Marianus*.....(*Silybum Marianum*) White fls; 4 ft; HA.....CDUS-3. 20¢

CARNATIONS: see *Dianthus caryophyllus*

CARTHAMUS. (KAHR-tha-mus) Bastard Saffron, Safflower.

Spiny leaved annuals; flower heads purplish, yellow or white, making ornamental clumps in the border.

—*tinctorius*.....Produces 2 dyes; orange heads; sow seeds in April; 3 ft; HA.....CATH-3. 20¢

CASSIA. (KASH-ah) Senna.

All are sun lovers and best in a sandy loam soil; very attractive with their finely cut foliage and showy flowers. Woody species are greenhouse plants in the North. The herbaceous kinds may be grown in the border.

—*artemisioides*. Wormwood. Sh. silky gray lvs; fls sulphur-yel; TA.....CASS-2. 25¢
—*fasciculata*. Partridge Pea. Easy, golden yel flaked crimson 18"; HHA.....CASS-11. 20¢
—*laevigata*. Ornamental shrub; pretty yellow fls; 6'; TP.....CASS-18. 20¢
—*marilandica*. Wild Senna. Massive racemes yellow fls; July-Sept; 5' HA.....CASS-19. 20¢
—*nicaraguensis*. One of the showier trees from C. Am; yellow; TTr CASS-24(M). 35¢
—*nodosa*. Jointwood. Tree to 50'; for the South; TP.....CASS-26. 30¢

CASTILLEJA. (kas-til-EE-yah) Painted Cup, Canadian Paint Brush.

Rare, due mainly to difficulty in growing; do not transplant easily. They are showy annuals, biennials and perennials, native to our West.

—*miniata*. Fl-bracts tipped brick-red, fls green edged red; 3'; HP.....CAST-19. 30¢

CATANANCHE. (kat-ah-NAN-kee) Cupid's Darts.

Herbaceous hardy annuals and perennials, long stalked blue or yellow heads of ray and disk fls; hardy perennials.

—*caerulea*. Everlastings; bloom first year; blue ray-fls; June-Aug; 2' HP.....CATA-1. 20¢

CEANOTHUS. (see-ah-NOH-thus).

Shrubs and small trees of the Pacific Coast and not hardy in northern states. Have pretty small white, blue or pink flowers in dense panicles. Best in a sunny sheltered place in well drained light soil. Plants can be dug in the fall and wintered over in a frost proof house.

—*austromontanus*. Evergreen; fls blue; 8'; TP.....CEAN-4. 25¢
—*crassifolius*. Shrub, fls white, 6'; very pretty lvs; TP.....CEAN-8. 25¢
—*cyaneus*. San Diego Lilac. Sh. dark blue fls; May-June; showy, 10'.....CEAN-10. 20¢
—*integerrimus*. Deer Brush. Fls white, 12'; HHP.....CEAN-21. 20¢
—*leucodermis*. Spreading Lilac; white; 12 ft; Calif; HHS.....CEAN-23. 25¢
—*prostratus*. Mahala Mat. Prostrate, everg'n, blue to white; RG; HHP.....CEAN-35. 40¢
—*pumilus*. Prostrate sh; 8"; fls blue-white; Ore; HHP.....CEAN-36. 40¢
—*tomentosus olivaceum*.....CEAN-47. 20¢
—*verrucosus*. Low sh; covered with clouds of small fls; S. Cal.....CEAN-50. 20¢

CELOSIA. (se-LOH-shi-ah) Cockscomb, Chinese Woolflower.

Popular annuals, all easily grown from seed which are best started indoors early in the spring. They grow best in a rich soil with plenty of moisture. The garden types are *C. argentea*.

CRISTATA or COCKSCOMB:

Dwarf Varieties: About 4-8" tall with large showy combs; they are use mainly in beds or pots. TA.

—*aurea*. Dark golden yellow combs.....CLOS-2A. 20¢
—*Empress*. Dark velvety crimson-maroon combs; 12" plants.....CLOS-2E. 20¢
—*President Thiers*. Velvety crimson combs, green fol; 10".....CLOS-2T. 20¢
—*Rose Beauty*. Soft rose colored combs.....CLOS-2R. 20¢
—*Dwarf White*. Grows 1 ft high; for beds or pots.....CLOS-2W. 20¢
—*Finest Mixed*. All dwarf, for beds or pots.....CLOS-2X. 20¢
—*Dwarf Mixed*. Very best mixed varieties of dwarf Cockscomb.....CLOS-2DX. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

PETUNIAS - Our Most Popular Flower

Petunias are our most popular flower and leads the list. It has so many uses and over such a large territory, besides being an ideal flower for the very small yard which is probably 90% of the gardens of today.

They are very easy to grow once the seed has been started. The chief pitfall the amateur runs up against in growing Petunias is in the seed sowing; almost invariably they bury the tiny seeds too deeply so that the sprouting seedlings cannot possibly fight their way to the surface. First the soil should be a good loamy texture with fine leaf mould mixture for the top. Flower pots, the shallow type or fern pot, makes an ideal seed pan; place some drainage material in the bottom and fill to the top with the above soil and then press down and level

a 60 degree Far. temperature at night and exposed to the light; germination shows in about 10 days, when the seedlings should have light and ventilation; if the soil was properly watered at the beginning, it usually is not necessary to rewater during the germination period. In too dry a place it will be best to protect the flower pot from too much drying out.

When the seedlings show 3 or 4 leaves, transplant to a flat containing good soil with plenty of humus worked into it and for still better plants, it is well to transplant them again after they get a good root system started, placing them into 2 or 3 inch pots.

Petunias require plenty of sunshine. Set outdoors when it is warm and no frost.

Of course, the bulk of the Petunia seed is now produced in this country but before the war Germany was a leading producer and of late years, Japan also has been a prominent grower, especially in the double flowered type.

Actually, there are less than 100 good varieties covering all the classes that are grown today altho one will find many different names in various catalogs.

but even 50 varieties covers the needs of flower growers and most of the larger Petunia seed growers do not have many more than this number.

In the production of Petunia seed, all of the larger flowered types are hand pollinated as well as hand harvested and you do not have to stretch your imagination to realize what an undertaking it is to produce this type of seed in this country under the present labor conditions. It would not be surprising that in the near future most of the Petunia seed will be produced in Germany and Japan.

All Petunias can be grouped under the following:

Bedding Types; Intermediate Types; Large Fringed Type; Large Plain Edged Type; Giant Type and Double Flowered.

Bedding Petunias

This group is sub-divided into the dwarf compact bush type or nana compacta, those known as hybrida and the pendula or balcony Petunias, having stems that are more trailing.

The nana compacta group are the ones best used for edgings, formal beds, pots and also where a dwarf compact bushy plant is wanted. The flower is medium in size, single and plain edged; they are very showy.

The hybrida group is similar as to the flower but grows taller, 18 inches, and does well in large beds, porch boxes, urns, etc. They are grown very much by florists for the general trade.

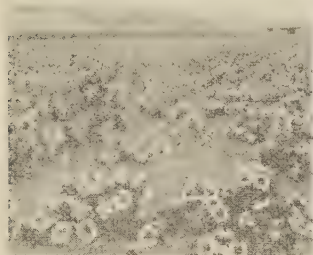
The balcony or pendula group differs from the above in that their foliage is more spreading or trailing and thus are ideal for window boxes or pots. They can be grown in beds as well. As to height they are intermediate between the above two classes.

The colors are white, blues, violet shades from pink to crimson.

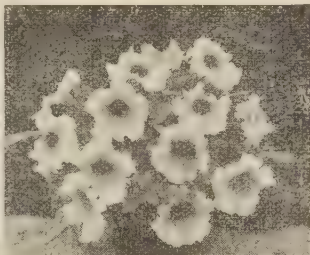
Thus if you are selecting Petunias for your outdoor beds, you have the choice of these three types to select from. They all have medium sized, plain edged flowers, all are very free flowering and if you buy well bred seed, you will get deep pure colors as well as uniform type of plant.

Buy Good Petunia Seed

Usually, when you buy the regular mixtures, the seed has cross-pollinated in the



Giant Romona Strain



Martha Washington

off, carefully sow seeds on top of this soil, using a little soil with the seeds so as to get a better distribution of the seeds, then give a fine sprinkling of sand over the seed, not over 1/16 inch at most, pressing this down firmly but carefully so that the seed will be in contact with the soil particles.

This work should really be done a day before planting the seed when the soil can be well watered and the pot soaked with water, letting this stand over night, before sowing the seed.

Then, after the seed is planted, place a pane of glass over the pot to prevent the loss of moisture, but watch carefully for too much condensation of water on the glass, which should be removed daily and the seed bed given ventilation.

The pot should be in a place with about



Fluffy Ruffles

fields and you can not expect as nice a strain as when you purchase a blend of straight varieties; the small difference in price, never off-sets the poorer strain.

Intermediate Type

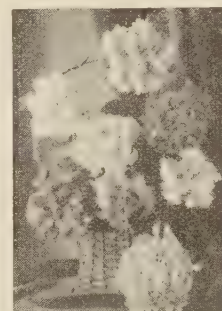
These have a larger size flower or the edges are ruffled. They usually come in mixtures and are grown in pots. They also vary in height from 8 inches up to 16 inches.

The Large Fringed Type

These are 12-16 inches high with the growth varying from compact to spreading but all having large ruffled or fringed flowers. While they can be grown in the garden, their main use is in the greenhouse as pot plants. Their large heavy flowers do not stand up well in beds under heavy winds



Giants of California



Shepherd's Double



Grandiflora
Single Fringed

and rains.

There are some 8-10 good varieties to select from, with yellow, white, velvety violet and in the mixtures under Fluffy Ruffles, the flowers are veined and in bicolor shades.

Continued on Page 188

Hints on Planting Penstemon Seed

By Ralph Bennett, Virginia

Part of Penstemon Society Circular.

There is nothing inherently difficult about the seeds in Groups A to C as listed below. They need only common sense treatment, not coddling. Treat them like you would any other choice perennial seeds in your locality.

Many failures result from seed beds or flats drying out when seedlings are tiny. Shading them by a lath frame or brush will prevent that. In wet springs be on the safe side and protect from cloudbursts with plastic glass covers or glass sash, so the seedlings will not be drowned or washed together.

Don't be one of those who every year report plantings ruined by wild beasts, such as dogs, cows, children, giraffes and hippopotami. There must be a way to keep them out. Chicken wire, 1/2-inch mesh, laid over beds or flats will keep out the smaller but equally destructive fauna: cats, mice, squirrels, birds, etc. Put in the bottom of the beds it will say "No" to those pesky moles.

Plant seeds any time during the winter or early spring, but to be sure of good results, do it early enough so you will be sure to get some freezing weather to stratify the seeds. They can be sown on top of frozen ground and covered with a little sand or something like asparagus tops to prevent the wind blowing them away.

Don't be in a hurry about transplanting the seedlings to the garden. They take hold better when two or three inches high than when tiny.

Group A

Easy, perennial, the showy border types. Treat as other perennials; they respond to good treatment. Dependable in all parts of the country except possibly in the extremely cold and extremely dry states.

Arlington Hybrid.

This is the Gladwyne strain or that crossed, in my opinion, with *P. canescens*. The great vigor and extreme variation of the seedlings indicate, to me, a hybrid. All forms are good; 12-30 inches high, purplish pink, purple, lavender to violet. Very floriferous.

Rose Queen.

Seeds from plants with old-rose flowers in Phlox-like heads on stiff, erect stems. Some may come in lavender instead of rose; 30 inches high.

Smalli.

Rose-pink flowers set off by showy green bracts, extra long-blooming; 18 inches.

Lavender Queen.

Like Rose Queen but in different tones of lavender and purplish pink.

White Queen.

The best white in *P. digitalis*; 30-36 inches high, Phlox-like plants, pure white, large flowers, long-lasting when cut. The strain comes true from seed.

brevisepalus.

Low growing, about 8 inches, pink to lavender flowers on arching stems above dense clumps of crinkly bright green leaves handsome all the year round, even in mid-summer and dead of winter.

ovatus.

Sky-blue flowers in Phlox-like heads on strong, erect stems. Does well everywhere; 2-3 feet high.

Flathead Lake.

A universal favorite; 18-24 inches. Pink flowers and somewhat like *P. barbatus* but

(Continued on Page 179)

CENTAUREA - CENTRANTHUS

This seed list continues from page to page and from issue to issue and runs alphabetically.

CELMISIA. (kla-MIS-ah) Compositae.

Perennial plants of New Zealand and Australia; large solitary heads of pure white ray or disk flowers. Can be planted on the Pacific Coast.

—*ceriacea* Monroil. Striking with silvery fol; lge white fls; 1½'; HHP.....CELM-1. 50¢
—*longifolia*. Very hardy mt. daisy; white tipped pink; 6 in; HP.....CELM-5. 50¢

CELTIS. (CEL-tis) HACKBERRY. Ulmaceae.

They are grown for ornament and shade, are hardy in the North. Their leaves are Elm-like. Most of the species are deciduous trees; a few evergreens and some shrubs.
—*laevigata*. Sugar-berry. Fr. orange-red; Ind-Tex; to 100 ft.....CELT-9(S).....50¢
Oz. 30¢; 4 Oz. 90¢; Lb. \$2.00

—*mississippiensis*. see *laevigata*.

—*occidentalis*. Fr orange-red; Canada-Ala; to 120 ftCELT-11(S). 50¢
Oz. 35¢; 4 Oz. 85¢; Lb. \$1.80

CENTAUREA. (sen-tau-REE-ah) Compositae.

Herbaceous annuals and perennials. There are many species, all of which have garden value, blooming from June to frost. Annuals are hardy; plant early.

BACHELOR BUTTONS, CORNFLOWERS, BLUE BOTTLE; HA, 2½ ft; fine cut flowers.

—Black Boy. Blackish maroon flowers; double.....CENT-1K. 15¢
—Blue Boy. Sky-blue, large double flowers.....CENT-1B. 15¢
—Emperor William. A lovely clear light blue; one of the best.....CENT-1E. 15¢
—Maroon. Large double flowers.....CENT-1M. 15¢
—Mauve. Large double mauve flowers.....CENT-1V. 15¢
—Pinkie. Deep pink, double flowers; excellent strain.....CENT-1P. 15¢
—Red Boy. Large double red flowers.....CENT-1R. 15¢
—Rose. Large double rose variety.....CENT-1Z. 15¢
—Snowman. The best pure white; double flowers.....CENT-1W. 15¢
—splendens.....CENT-28S. 15¢
—Blend of Above Varieties. A real hand made blend.....CENT-1X. 15¢

C. CYANUS NANA: These grow 12" tall making excellent bedding plants or for pots.

—Azure Fairy. Double light delf-blue, extra double; bushy.....CENT-2Z. 15¢
—Jubilee Gem. Dwarf compact, 12", double dark blue; edging or pots.....CENT-2J. 20¢
—Polar Gem. A new white variety of Jubilee Gem.....CENT-2P. 20¢
—Lilac Lady. A pretty lilac or lavender variety; double.....CENT-2L. 20¢
—Purple Prince. Dwarf purple; pretty cut flower.....CENT-2R. 20¢
—Mixed Dwarf Varieties. The above kinds blended.....CENT-2X. 15¢

C. IMPERIALIS: Giant Sweet Sultan. Hybrids between *C. moschata* and it white variety; 4 ft. fragrant; flowers soft thistle-like heads; makes nice border plants and cut; HA.

—Dark Blue. Excellent for cutting.....CENT-28B. 15¢
—graxioza. Lilac flowers.....CENT-28G. 15¢
—Rose. Deep pure color strain.....CENT-28Z. 15¢
—White. Pure white strain.....CENT-28W. 15¢
—Imperial Blend. A hand made blend of colors.....CENT-28X. 15¢

C. MOSCHATA: Sweet Sultan. Fragrant white, yellow or purple solitary flowers, 2" across, beautifully soft and fluffy. Fine for both border or for cutting, hardy annuals.

—The Bride. Large pure white, charming, 2 ft; HA.....CENT-45D. 15¢
—suaveolens. Yellow Sweet Sultan, 2½ ft, HA.....CENT-45S. 15¢
—Blue. A rich blue strain.....CENT-45B. 15¢
—Pink. A rose-pink strain.....CENT-45P. 15¢
—White. Pure white heads; needed in cutting.....CENT-45W. 15¢
—Moschata Blend. Hand made blend of colors for border or cutting.....CENT-45X. 15¢

CENTAUREA SPECIES:

—*americana*, Lilac. Basket Flower. Thistle-like fls; 4-5" ac; HA.....CENT-7L. 15¢
—White. Pure white fls; July-Sept; HA.....CENT-7W. 15¢
—Andrewii.....CENT-8. 20¢
—dealbata. Rose Delight. Mauve-rose; very pretty; 2½'; HP.....CENT-20. 20¢
—depressa. Prostrate; blue heads 1½" across; lvs silvery, HP.....CENT-21. 20¢
—Fritschii. Rose; heads ½ in. ac; 6 ft; HP.....CENT-24. 20¢
—gymnocarpa. Dusty Miller. Lvs densely white, woolly; 2'; boxes HHP.....CENT-30. 20¢
—Jacea. Solitary heads, 1½" ac; purple; 2 ft; HP.....CENT-32(F). 35¢
—macrocephala. Enormous double golden fls; 3-4'; July-Aug; HP.....CENT-38. 20¢
—montana. Mountain Bluet. Fls 2" ac; brilliant blue; June-Sept; 2-3'; HP.....CENT-45A. 20¢
—White. Same with white flowers.....CENT-45W. 20¢
—orientalis. Yellow heads, 2½" ac; 3 ft; HP.....CENT-51(F). 35¢
—plumosa. (nervosa) Deep purple; 30"; HP.....CENT-55(F). 35¢
—ruhenica. Pale 2" yellow fls in heads; border; 3'; HP.....CENT-62. 20¢
—Hardy Centaurea Blend. Just the hardy species.....CENT-X. 20¢

CENTAURIUM. (sen-TAW-ree-um) CENTAURY (Erythraea) Gentianaceae.

Grown in the border or rockery. They are not hardy in the North and require protection from the sun and frost. Annuals, a few biennial; best in a light sandy soil.

—*Massonii*. Wee cousin of Gentians; neat ½ in. tufts; pink; HHA.....CENA-4(W). 30¢

CENTRANTHUS. (sen-TRAN-thus) Valerianaceae.

Annuals and perennials growing well from seed in the open border. They have dense terminal clusters.

—*macrospilon*, Mixed. Pretty rose and white fls; 2 ft, HA.....CENS-2. 15¢

CENTROPOGON. (sen-TROP-oh-gon) Lobeliaceae.

Tropical American shrubby plants of a somewhat climbing habit; grow in warm greenhouse. They will make excellent basket plants.

—*psittacimorphus*. A species collected in Columbia, TP.....CROP-2. 25¢

CEPHALARIA. (se-fah-LAY-ri-ah).

Annuals and perennials with Scabiosa-like flowers and used in the border and for cutflowers. Colors creamy white and various yellow tints. June-August, ordinary soil.

—*alpina*. Sulphur-yellow; heads 1½" ac; to 6 ft; HP.....CEPH-1(F). 35¢
—*graeca*. Yellow fls, long peduncled heads 1½" ac; Greece; 2 ft; HP CEPH-5(F). 35¢
—*lataria*. Tall robust habit; fls sulphur-yellow; 5 ft; HP.....CEPH-12. 20¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

CEPHALANTHUS - CERATONIA

CEPHALANTHUS. (sef-al-LANTH-us) BUTTON-BUSH. Rubiaceae.

Small trees and shrubs with showy flower heads. Easily grown in moist soils.

—**occidentalis.** Fls creamy in long spiked heads; July-Sept **CEPA-1(S).** 50¢
Oz. 75¢; Lb. \$1.90

CEPHALOTAXUS. (sef-al-oh-TAX-us) PLUM-YEW. Cephalotaxaceae.

Evergreen trees and shrubs. They are hardy up to Michigan and New England. Similar to Taxus.

—**drupacea:** see **Harringtonia V. drupacea.**

—**Harringtonia V. drupacea.** Jap. Plum. Tree to 30 ft; ornamental..... **CEPX-6(S).** 50¢
Oz. 80¢; Lb. \$2.00

—**Fortunii.** Chinese Plum. Tree to 30 ft; hardy to Michigan..... **CEPX-5(S).** 50¢
Oz. 90¢; Lb. \$2.10

—**pedunculata.** Harrington Plum. Grows slowly; hardy to Michigan..... **CEPX-6P(S).** 50¢
Oz. \$1.50; Lb. \$3.25

—**Cephalotarus Mixed.** **CEPX-X.** 35¢

CERASTIUM. (se-RAS-ti-um) Mouse-ear. Caryophyllaceae.

These are excellent rock garden or edging plants, easily grown in ordinary soil. Usually mat forming, leaves silvery, with showy star-like flowers in May and June.

—**alpinum.** White fls in summer; 6", RG; HP..... **CERS-1.** 20¢

—**lanatum.** Fine cushion RG plant, silvery lvs; 1 in. white fls; HP..... **CERS-1L(W).** 30¢

—**Biebersteinii.** Creeping; 6 in; white; May-June; HP..... **CERS-4.** 20¢

—**candidissimum.** **CERS-8(F).** 35¢

—**lanigerum.** (Clem) **CERS-10(F).** 50¢

—**moesiacum.** (Fritv) **CERS-11(F).** 50¢

—**tomentosum.** Snow-in-Summer. Creeping, fol silvery; fls white; RG; HP..... **CERS-13.** 20¢

—**uniflorum.** White fls ½" ac in 1-3 fld cymes; 3"; HP..... **CERS-14(F).** 50¢

CERATONIA. (sei-ah-TON-ee-ah) Leguminosae.

Carob, St. John's Bread. One evergreen tree to 50 ft. from the Medit. regions. They will stand a few degrees of frost and are grown in Fla. and S. Calif. for food.

—**Silqua.** **CERQ-1(S).** 50¢
Oz. 70¢; Lb. \$2.00

CERATOSTIGMA. (ser-ah-toh-STIG-ma) Plumbaginaceae.

Desirable border plants and shrubs blooming late into the fall. They are hardy perennials with shining leaves. Flowers saucer-shape and blue and rose.

—**Griffithii.** Low shs; fls blue; India; hot dry places; 3-4'; HP..... **CERA-1.** 30¢

—**Willmottianum.** Bright blue fls with rosy tube; July-Nov; 5 ft; HSH..... **CERA-3.** 25¢

CERCIS. (SER-ciss) RED BUD, JUDUS TREE. Leguminosae.

Small trees and shrubs, noted for their early spring flowers which appear before the leaves. They thrive in a fertile sandy loam. Sow seeds in spring over heat. C. canadensis is only species hardy in Michigan.

—**canadensis.** Shrub or tree to 40 ft; rosy pink fls; HTr..... **CERC-1(S).** 50¢
Oz. 60¢; 4 oz. \$1.20; Lb. \$3.25

—**chinensis.** Tr to 50 ft; purplish pink fls; China..... **CERC-2(S).** 50¢
Oz. 75¢; 4 oz. \$2.00; Lb. \$5.50

—**occidentalis.** Sh 15 ft; reddish fls; Calif; Oz 65¢; 4 oz \$1.40 Lb. \$3.25..... **CERC-4(S).** 50¢

—**Silquastrum.** Sh or tr 40 ft; purplish rose; Oz. 35¢; 4oz 65¢; Lb. \$2.00..... **CERC-3(S).** 50¢

—**alba.** White flowers..... **CERC-9A(S).** 50¢
Oz. 40¢; 4 oz. 70¢; Lb. \$2.25

—**Cercis Blend.** All species **CERC-X.** 30¢

CESTRUM. (SES-trum) Solanaceae.

Trees and shrubs of the North, very ornamental and having red or pink flowers early in the spring before the leaves appear.

—**occidentalis.** Sh to 15 ft; fls reddish in clusters, Cal; HP..... **CERC-4.** 30¢

CHAENACTIS. (kee-NAK-tis) Compositae.

Shrubs and small trees of tropical regions and grown in the greenhouse in the North. They make attractive winter plants with their bright flowers. Cuttings can be taken in February or early March and kept in a warm temperature.

—**Douglasii.** Bride's Bouquet. Fls white; 1-2 ft; June-July; HB..... **CHAE-1.** 20¢

CHAENOMELES. (kee-NOM-el-eez) Flowering Quince. Rosaceae.

Deciduous shrubs native of East Asia, having showy flowers very early in the spring. Stratify seeds and sow early in spring. Hardy in the North. Usually listed as Cydonia.

—**japonica.** Dwarf Japanese Quince; scarlet-red; 10 ft; HSh..... **CHAO-1.** 25¢

—**pygmaea.** **CHAO-1P.** 25¢

—**semperflorens.** **CHAO-4.** 25¢

CHAMAEROPS. (kam-MEE-rops) Palmaceae.

One low bushy fan-palm native of the Medit. regions. Also grown under glass.

—**humilis.** 3-5 ft; easy; hardy on Gulf Coast; 4 oz. 80¢; Lb. \$1.50..... **CHAO-2(S).** 50¢

CHEIRANTHUS. (ky-RAN-thus) Cruciferae.

Perennials, many of which rank amongst the showiest flowers. The Wallflower belongs to this genus and under the species Cheiri. There are some interesting possibilities in this genus as it hybridizes with Erysimum. The Siberian Wallflower comes under the latter genus now. They are natives from the Canary Islands to the Himalayas and in the far North are not hardy.

CHEIRI: Wallflower. Sow the seed as early in the spring as is possible that a strong robust will be grown as the success in growing them depends much on a strong plant. Weakly grown plants are sure to die. They are cool weather plants. Treat as biennials.

—**Cloth of Gold.** Popular rich yellow, large flowered, 18"; HHPB..... **CHEIR-1C.** 15¢

—**Fireball.** New Swiss variety; fiery red; HHB..... **CHEIR-1B.** 20¢

—**Fire King.** Brilliant orange..... **CHEIR-1F.** 15¢

—**Giant Goliath.** Dandy forcing variety; dark maroon; HHB..... **CHEIR-1G.** 20¢

—**Goliath.** A very beautiful single in maroon; HHB..... **CHEIR-1L.** 15¢

—**Golden Monarch.** A rich yellow counterpart of Vulcan; 1'; HHB..... **CHEIR-1D.** 15¢

—**Ivory White.** Nearest to white; 18"; HHB..... **CHEIR-1E.** 15¢

—**Orange Bedder.** Rich orange shading to apricot-yellow; 1'; HHB..... **CHEIR-1N.** 15¢

—**Ruby Gem.** Very large and fine ruby-violet; 18"; HHB..... **CHEIR-1R.** 15¢

—**Vulcan Improved.** Rich velvety crimson; 1'; HHB..... **CHEIR-1U.** 15¢

—**Blend of Above.** Hand made blend of varieties..... **CHEIR-X.** 15¢

CHEIRANTHUS: (Wallflower) Continued on Page 180)

TORENIA FOURNIERI

Words fail to express my appreciation of your magazine you were so kind to send me. Just the kind of magazine I have always wished for but could never find.

About ten years ago I had a plant of Torenia and since that time have tried in vain to find out the name. Imagine how thrilled I was to find the description in your magazine. I enclose \$3.20 for a packet and two years subscription.

Mrs. H. D. Newhart, Nevada City, Calif.

AIR PLANE SEED

During the course of a year we see many queerly formed seeds and of all sorts of colors but the seed of *Terminalia calamansani*, has real class, as well.

The seed has wings, beautifully curved and formed and no air plane designer could improve on them. I have never seen them sailing thru the air but I believe they could make a good journey.

This tree was introduced into Florida from the South Sea Islands by the Fairchild Tropical Gardens at Coconut Grove, Fla.

HINTS ON PLANTING PENSTEMONS

(Continued from Page 178)

lower and better.

albertinus.

Sky-blue on arching stems; 6-8 inches high. Does well nearly everywhere; a gem for the rock gardeners.

whippleanus.

Tall, numerous stems, 2-3 feet high, reddish purple flowers.

Group B

These are especially suited to the Rocky Mountain States, where Group A may possibly not prove dependable and to the Midwest and Great Lakes regions. They do fairly well in most other sections.

Glabri.

Tall spikes of flowers in solid colors, much like Delphiniums; 30-36 inches tall, stiff, upright stems.

unilateralis.

This is purple.

brandegei.

The light blue is best.

glaber.

Specify light blue.

clutei.

Pink flowers, glaucous toothed leaves, 30-36 inches high.

ovatus, albertinus and whippleanus.

These three species also do well in this region.

Group C

Especially suited all thru the Midwest and south to Texas and thru the Great Lakes regions.

murrayanus.

Tall, erect stems 2-4 feet high; scarlet flowers, glaucous leaves.

cobaea, lavender.

Very large flowers, lavender to white; 30-36 inches high.

Seeba and Fate Hybrids.

These are crosses between *P. grandiflorus* and *P. murrayanus*. Flowers in many colors, on tall stems. Not well adapted to the East, at least around Washington.

NOTE: All kinds listed in Groups A and B do well in the region covered in Group C, but some in Group C may not do well in the regions for which Groups A and B are recommended.

We would like to send you EVERY issue each month but it will be necessary for you to subscribe; it costs but \$2.00 per year

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

RARE VINES SPRING DELIVERY

We list here some of the most beautiful of the woody climbers, all rarely offered. Orders will have to be placed at once, as many are imported and more time is required to handle these rare items than those that are commonly sold and dug by machine.

This is a rare opportunity to secure these hard-to-find Climbers.

ACTINIDA.

A genus of vigorous, easily cultivated Asiatic summer flowering twining shrub. —*arguta*. Flowers about ¾" across, white slightly fragrant, anthers purple. Berries greenish yellow, 1" long. Will reach the top of lofty trees. Each \$1.75

—*chinensis*. Leaves 6"-9" wide; flowers fragrant, 1½" across, creamy white changing to buff-yellow, unisexual. Fruits 1", long and edible. Each \$2.00

—*coriacea*. Partially evergreen species with lanceolate leaves and flowers rose-pink. Plants raised from seed. Each \$1.50

—*Giraldii*. A rare Chinese species with broadly ovate leaves. Each \$2.00

—*Kolomikta*. Remarkable on account of the tri-colored variegations of the leaves, the terminal half being suffused white and pink. Flowers white, slightly fragrant, ½" across. Each \$2.00

—*melanandra*. Flowers numerous and very attractive, pale lemon-yellow with dark grey anthers. Leaves elliptic-lanceolate, with bright red stalks. Each \$1.75

—*polygama*. Flowers white, fragrant, ¾" across; berries translucent yellow. Leaves oblong-ovate. Each \$1.50

—*purpurea*. Differs from *A. arguta* in its more elliptic-oblong leaves and purple berries which are sweet. Each \$2.00

AKEBIA.

—*quinata*. Semi-evergreen twiner with very attractive foliage. The chocolate-purple female fls are fragrant. Each \$1.50

—*trifoliata*. (lobata) Deciduous or partially evergreen plant, very elegant in habit. The deep purple female flowers are conspicuous in April. Each \$1.50

ARAUJIA.

—*sericifer*. (Physianthus albens) The White Bladder Flower of Brazil. A vigorous evergreen twiner for the mildest localities. Flowers in July, white, tinged red, fragrant. Each \$2.50

ARISTOLOCHIA.

The climbing "Birthworts" are of easy culture and among the most remarkable and vigorous of twining shrubs. The flowers, produced during summer, are curiously formed, resembling in shape a Dutchman's pipe or siphon.

—*altissima*. Very distinct species from Sicily and Algeria, resembling a Smilax in its bright green leaves. Flowers narrowly tubular, brownish yellow with darker markings. Rather tender. Each \$1.25

—*monpinensis*. Vigorous Chinese species. Flowers with yellow throat and brown-purple limb. Each \$2.00

—*manshuriensis*. Differs from *A. Siphon* in its flowers being slightly larger and in color yellowish, flushed purple. Each \$1.25

—*sempervirens*. Tender evergreen species for far South, with purple flowers. The branches are normally prostrate and only partially climbing. Each \$1.50

ASTERANTHERA ovata.

A small, trailing creeper, collected in S. America by Capt. C. Ingram and belonging to the order Gesneriaceae. The tubular, two-lipped flowers are over 2" long and in color carmine, the lower lip having blood-red veins accentuated by the white throat. Hardy only in South. Each \$2.00

BERBERIDOPSIS corallina.

The "Coral Plant" of Chile. One of the most beautiful evergreen climbers. Flowers deep coral crimson in pendent racemes. Leaves dark green, leathery, glaucous beneath. Hardy only in South. Each \$1.50

BERCHEMIA Giraldiana.

Each \$1.50
A graceful scandent shrub, attaining 8
Continued on Page 181

CHRYSANTHEMUMS

CHEIRANTHUS: Continued from Page 179

ANNUAL WALLFLOWERS: This strain will flower the first season if started indoors.

—*Golden*. CHER-2G. 15¢
—*kewensis*. Bushy per; fls 1 in. ac in upright racemes; orange; HHP..... CHER-3. 20¢
—*linifolius*: see *Erysimum linifolium*.

CHEIRANTHUS SPECIES:

—*alpinus*. Lemon-yellow fls; Norway; 1 ft; HP CHER-4(F). 40¢

CENOPODIUM. (kee-no-POH-di-um) Goosefoot.

Just a few ornamental species and some used for greens and herbs. Easily grown.
—*Boirys*. Feathered Geranium Jerusalem Oak. Graceful plumes; 2'; HA..... CHEN-6. 15¢
—*Bonus-Henricus*. Good Kink Henry; Mercury. HP; see Herb List.... CHEN-5(V). 25¢

CHILOPSIS. (ky-LOP-sis) Bignoniaceae.

One deciduous shrub or tree, to 20 feet, native of SW in dry regions; along streams.
—*linearis*. Desert Willow. Fls trumpet-shape, lilac, terminal racemes..... CHIL-1. 25¢

CHIONANTHUS. (kye-oh-NANTH-us) FRINGE TREE. Oleaceae.

The Fringe Trees are hardy in the North with a little protection and thrive in a sunny position and a moist sandy loam. Plant seed in autumn or stratify for spring.
—*virginicus*. 30 ft; Pa. to Fla; clean seed Oz. 70¢; 4 oz. \$1.60; lb. \$3.50.... CHIN-3(S). 50¢

CHIRONIA. (ky-RON-ne-ah) Gentianaceae.

African plants with pink and purple flowers in cymes; grown in Calif.
—*transvalensis* Bright pink on slender stems; marshy ground; 2½ ft; TA.... CHIO-3. 35¢

CHRYSANTHEMUM. (kris-AN-the-mum) Compositae.

Large genus of annuals and perennials, of which there is a very large number of very pretty ornamentals. They can be divided into five or six classes as follows:

C. CARNATUM: The popular Painted Daisy; plants 2½ ft tall, well branched, flowers 3" across and all with dark eye, surrounded by a narrow yellow ring, then slightly larger scarlet ring followed by the dominant color for the variety. Hardy annuals, best in a sunny location and excellent for mass effect or for cutflowers. Space plants 20".

—*atrococcineum*. The Sultan; dark purple..... CHRY-1A. 15¢

—*Burridgeanum*. Pure white petals, zoned brownish red; lge brown disk..... CHRY-1B. 15¢

—*Hybrid, Double Fringed*. Beautiful English strain of doubles; 2½'..... CHRY-1H. 20¢

—*chameleon*. Golden chamois, scarlet and yellow zone; 18"..... CHRY-1C. 15¢

—*Cocarde*. White and crimson with yellow ring; pretty..... CHRY-1K. 15¢

—*Dunnett's Double Hybrids*. Double flowers in various colors..... CHRY-1D. 15¢

—*Scarlet*. CHRY-1DS. 15¢

—*White*. CHRY-1DW. 15¢

—*Golden Yellow*. CHRY-1DY. 15¢

—*Eclipse*. Shading light yellow to apricot, garnea band, yellow zone..... CHRY-1E. 15¢

—*leuteum*. Yellow flowers..... CHRY-1L. 15¢

—*Northern Star*. White with dark disk..... CHRY-1N. 15¢

—*W. E. Gladstone*. Large purple-red flowers..... CHRY-1G. 15¢

—*White Queen*. Pure white, pale yellow zone; 18"..... CHRY-1Q. 15¢

—*Single Flowers Mixed*. CHRY-1SX. 15¢

—*Double Flowers Mixed*. CHRY-1DX. 15¢

—*Merry Mixture*. A California grown strain containing all the varieties..... CHRY-1X. 15¢

C. CORONARIUM: Tallest of the hardy annuals and if planted in very rich soil may need staking. Sow seed as early as possible, usually where plants are to grow; thin 1".

—*Golden Glory*. New English single, deep yellow, central disk same; 3'..... CHRY-2G. 20¢

—*Golden Gem*. Dwarf double; try in pots; 1'; pretty..... CHRY-2M. 20¢

—*Golden Crown*. Silvery green fol; butter-yellow fls; 2½ ft..... CHRY-2C. 15¢

—*Double Yellow*. CHRY-2Y. 15¢

—*White*. CHRY-2W. 15¢

—*Sulphur Yellow*. CHRY-2S. 15¢

—*Double Mixed*. CHRY-2DX. 15¢

—*All C. Coronarium Mixed*. CHRY-2X. 15¢

C. SEGETUM: Plant habit similar to *C. carinatum*, 2½ ft tall. The flowers are 3" across with dark or light eye surrounded by inconspicuous pale yellow disk, then the dominant color of the variety. All hardy annuals; best to sow seed where plants are to grow and as early as possible in the spring; thin to 12-18 inches apart.

—*Eastern Star*. Bright yellow with dark eye; 1 ft..... CHRY-3S. 15¢

—*Eldorado*. Deep canary yellow with black center, pretty; 1½ ft..... CHRY-3E. 15¢

—*Golden Glow*. Double Golden yellow..... CHRY-3L. 15¢

—*Goria*. Double yellow flowers..... CHRY-3G. 15¢

—*Helios*. Evening Star. Golden yellow..... CHRY-3H. 15¢

—*Morning Star*. Large yellow with black center; 18"..... CHRY-3M. 15¢

—*Zebra*. Flowers striped and blotched..... CHRY-3Z. 15¢

—*Blend*. All the above varieties..... CHRY-3X. 15¢

C. INDICUM: Perennials, 2-3 feet tall with soft foliage and much branched. They are very showy in masses, blooming in five months from seed. Flowers are in heads, very numerous and ½-1 inch across. Plant either early in the spring or later for bloom the following year.

—*Double Special Blend*. Rich colors, extra choice strain..... CHRY-4DX. 20¢

—*Saier's Early Flowering Strain*. Very choice single, bright colors..... CHRY-4SX. 25¢

C. COCCINEUM or PYRETHRUM: Fine cutflowers, especially liked by florists. Flowers are in daisy-like heads. If kept cut it will flower into the autumn. Flowers the second year from seed. Space plants not less than 1 ft; hardy perennial.

—*aureum, Gold Feather*. CHRY-5AF. 15¢

—*Golden Moss*. Very dwarf..... CHRY-5AM. 15¢

—*Dark Carmine*. Very nice variety..... CHRY-5BC. 20¢

—*Golden Gem*. Dwarf type..... CHRY-5AG. 15¢

—*corymbosum*. (Pyrethrum) White fls; border; 2-4 ft; HP..... CHRY-19. 20¢

—*Giant White*. CHRY-5W. 15¢

—*Rose*. CHRY-5Z. 15¢

—*Pink*. CHRY-5P. 15¢

—*Langport Scarlet*. Excellent for cutflowers..... CHRY-5L. 15¢

—*roseum, Single and Double*. Extra strain..... CHRY-5R. 15¢

CHRYSANTHEMUM: Cont. on Page 181.

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

CHRYSOPSIS - CINERARIAS

CHRSANTHEMUM: Cont. from Page 180.

- Robinsons Giants. Beautiful single cutflower strain.....CHRY-5B. 20¢
- Market Strain. An European double strain for commercial growing.....CHRY-5M. 20¢
- selaginoides. Fern-leaf, golden yellow foliage.....CHRY-5S. 15¢
- Prize Double. Choice cutflower blend.....CHRY-5DX. 20¢
- Florist Single Blend.....CHRY-5SX. 20¢
- Blend of all C. coccineum.....CHRY-5X. 15¢

C. MAXIMUM or SHASTA DAISY: Larger flowers than C. Leucanthemum. In the newer varieties, the flowers are as large as 4" across, some double, even fringed petals. They make the best of cutflowers and where choice single flowers are wanted, such as used in the florist shops, the flowering stems should be restricted and not too many per plant allowed to grow. Rich soil and full sun best. Perennials flowering second year from seed. All white flowers.

- Alaska. Pure white, good stems.....CHRY-6A. 15¢
- Blutschau. Choice German variety of Shasta Daisy.....CHRY-6B. 20¢
- Chigwell Giant. Giant pure white flowers, beautiful shape.....CHRY-6C. 15¢
- Conqueror. Large pure white, stems 2½ ft. long.....CHRY-6Q. 15¢
- Diener's Double White. Giant double flowers.....CHRY-6DW. 20¢
- Exhibition. Large Swiss strain.....CHRY-6E. 20¢
- Mrs. J. Tersteeg. Robust Holland strain.....CHRY-6T. 20¢
- Fringed Beauty. Fringed and Curled petals.....CHRY-6F. 20¢
- hybrids. Extra choice; mixed.....CHRY-6H. 15¢
- May Queen. Medium size, good for garden massing in border.....CHRY-6M. 15¢
- Mont Blanc. Extremely large flowers.....CHRY-6MB. 15¢
- Polar Sea. New German strain.....CHRY-6P. 15¢
- Saier's Early. Extremely early Shasta; nice form; long stiff stems.....CHRY-6S. 20¢
- The Speaker. Enormous white flowers.....CHRY-6T. 15¢
- White Dame. Choice Holland variety.....CHRY-6W. 15¢
- Shasta Blend. Contains all the above with hybrids.....CHRY-6X. 15¢

C. INODORUM: see *Matricaria inodora*.

OTHER CHRYSANTHEMUM SPECIES:

- cinerariaefolium. Dalmatian C. 2 ft; HP.....CHRY-14. 20¢
- arcticum. Fls Aster-like, white to lilac; Arctic regions; 6"; HP.....CHRY-14(F). 40¢
- densum.....CHRY-20(F). 40¢
- Mawii. White ray fls, rose on back; 1'; HA.....CHRY-29. 20¢
- Korean Hybrids. Saved from the best named varieties.....CHRY-22K. 20¢
- Arctic Hybrids. Arctic Daisies. Single, very hardy; HP.....CHRY-22A. 20¢
- Parthenium. Feverfew. Bushy; 2-3 ft; fol. crisped; border; HP.....CHRY-37. 20¢

CHRYSOPSIS. (kris-OP-sis) Golden Aster.

Daisy-like yellow heads of ray or disk flowers on 1-3 ft. plants and at home in a dry sunny part of the garden. They are hardy perennials.

- amplifolia. To 20"; Colo; HP.....CHSO-1(F). 40¢
- villosa. Golden Aster; heads 2 in. ac; golden yellow; 1 ft; HP.....CHSO-10. 20¢

CINERARIA. (sin-ee-RAY-ree-ah) Botanically *Senecio Cruentus*.

Listed here are only those varieties grown by the florist for pot plants. Seed may be sown from April to Sept., May and June being the main months. They make a very easily grown pot plant.

- Cremers' Prize Strain. 20" plants, large flowers, choice strain.....CIN-1. 50¢
- multiflora nana. Dwarf compact plant; large flowers excellent.....CIN-2. 50¢
- Berlin Market. 15" tall, brilliant strain, large flowers.....CIN-2B. 50¢
- Siter's Rainbow Strain. Compact plants; brilliant colors; 1ge fls.....CIN-4. 50¢
- Prize Exhibition Strain. Extra large flowered strain; extra good.....CIN-5. 50¢
- French Exhibition. Extra large flowered French strain; choice.....CIN-5F. 50¢
- Cineraria Blend. A carefully hand made blend for the GH.....CIN-X. 50¢

CINNAMOMUM. (sin-am-MOH-mum) Lauraceae.

Aromatic shrubs and trees from Australia and Asia, mostly evergreens. They are ornamental as well as valuable for medicinal and spice purposes. Sandy loam best and transplant seedlings to pots till ready for out doors.

- Camphora. Champhor T. 40 ft; street tree in the South.....CINN-2(S). 50¢
- 4 Oz. 75¢; 1b. \$2.00

CIRSIIUM. (SUR-si-um) PLUMED THISTLE. Compositae.

Rank growing prickly plant with purple, yellow and white flowers in heads; easily grown and for bold effect in the wild garden.

- eriophorum. Large purple heads; 5 ft; HB.....CIRS-5(F). 40¢
- occidentale. Silvery fol; fls scarlet; pretty; 2 ft; HB.....CIRS-13. 20¢
- candidissima. White-tomentosa fol; 2-4 ft; HB.....CIRS-13C. 20¢

CISTUS. (SIS-tus) Rock Rose. Cistaceae.

Not hardy in the far North and best in full sun, dry light soil with lime present. They are shrubby and flowers much like single roses. Start in pots; do not prune much.

- ladaniferus. Gum Cistus. Pretty sh with white purple spots; 3 ft; HHSh.....CIST-10. 25¢
- laurifolius. Pure white cup-shaped fls; 8 ft; HHSh.....CIST-11(W). 30¢

CLADRASTIS. (klad-RAST-iss) YELLOW-WOOD. Leguminosae.

N. Am. deciduous trees with flowers in paniced racemes followed by flattened pods. Ornamental and easily grown from spring planted seed. See also *Maackia*.

- lutea. To 50 ft; June; S. States Oz. 75¢; 4 Oz. \$1.75; 1b. \$4.50.....CLAD-2(S). 50¢

CLARKIA. (KLARK-ee-ah) Onagraceae.

Annual plants, easily grown in a sunny place in light soil. They are very pretty for the border, growing 2-3 ft tall, in upright bush form. The flowers are ver pretty. Blooms in July and August, space plants 1 foot apart. Start indoors or the seed can be planted where the plants are to grow; they are hardy annuals.

C. ELEGANS: The commonly grown species, coming in many pretty varieties both single and double flowers; 2 ft. tall.

- Brilliant. Double brilliant orange.....CLAR-1B. 15¢
- Echantress. Double salmon-pink, large, pretty.....CLAR-1E. 15¢
- Firebrand. Brilliant copper-scarlet.....CLAR-1F. 15¢
- Gloriosa. Distinct break in color, bright crimson.....CLAR-1G. 15¢
- May Blossom. Pure glowing orange, double.....CLAR-1M. 15¢
- Illumination. Orange mingled with rose; outstanding variety.....CLAR-1L. 15¢
- Orange King. Bright orange-scarlet; best orange.....CLAR-1K. 15¢

CLARKIA: Continued on Page 182.

RARE VINES

Continued from Page 180

to 15 ft, bearing clusters of small white flowers and red and black berries. Leaves are a pleasing glaucous sea-green color.

—*lineata*. A little known Chinese and Formosan species. The small, oblong-ovate leaves are whitish beneath. Flowers are greenish white, in panicles. Each \$1.75

—*racemosa*. Semi-scandent Japanese species, attaining about 15 ft. The small ovate, bright green leaves turn clear yellow in autumn. The profusion of small white flowers is followed by red, finally black, berries. Each \$1.75.

—*variegata*. Leaves conspicuously variegated creamy white. Each \$2.00

BIGNONIA capreolata. A beautiful tall tendrel-climber native to the South. Flowers somewhat funnel-shaped, orange-red, carried in clusters during June. Each \$1.50

BILLARDIERA.

—*logiflora*. Charming Tasmanian twining plant. The drooping flowers are greenish yellow, about ½" long; berries brilliant deep blue, oblong, ¾-1 in. long. Each \$1.75

—*fructu-albo*. Same but having white berries. Each \$1.75

CAMPISIS. (*Bignonia, Tecoma*).

—*grandiflora*. This beautiful climber will attain a height of 20 ft. or more. Flowers deep orange and red, carried in clusters during late summer and early autumn. Best grown on warm wall in full sun, less self-supporting than *C. radicans*. Each \$1.75

—*sanguinea*. Fl's deep red. Each \$1.75

—*Thunbergii*. Flowers orange with reflexed lobes. Each \$1.75

ONE EACH of above 3 for \$4.00

CELASTRUS.

Vigorous twining or scandent shrubs, very useful for covering tree stumps or other unsightly objects.

—*angulata*. (*latifolius*) Has striking, large broadly ovate leaves and conspicuous orange and red fruits. Each \$2.00

—*Loeseneri*. Handsome, vigorous species with remarkably large, glaucous green leaves. Each \$2.00

—*orbiculatus*. Vigorous climber, reaching a height of 40 feet. The leaves turn clear yellow in autumn, contrasting strongly with the scarlet seeds which persist longer. Each \$1.75

—*Rosthornianus*. Rare species from Central and West China. The comparatively small elliptic; leaves are pale green and thick in texture. Each \$1.50

CLEMATIS SPECIES. (Including *ATRAGENE*).

The species of this popular family are, on the whole, much more easy to establish than the large-flowered hybrids, that were listed on the back cover of the December issue, tho, like the latter, they thrive best in full sun, with their roots in cool, moist well drained soil. The only pruning they need is the removal of dead or useless wood, and the shorting of shoots which have extended beyond their allotted space; but if necessary, the late-summer flowering kinds may be pruned hard every spring.

—*afoliata*. Curious N. Zealand scandent shrub with rush-like branches, usually devoid of leaves. Worth growing for its unusual aspect and for the fragrance of its small, greenish white flowers which are borne in May. Tender. Each \$1.75

—*alpina*. Flowers blue, with central tuft of whitish stamens, opening in April and May. Prefers a cool position and grows 6-8 ft. high. Each \$1.50

—*siberica*. Same with yellowish white flowers. Each \$1.50

—*archandii*. A strong growing Chinese evergreen species. Flowers about 2 inches across, creamy white, carried in clusters during April. The leaves are the outstanding feature of this climber, their leaflets being large, dark green and of a leathery texture. Each \$3.00

—*Apple Blossom*. A beautiful variety with pink flowers. Each \$2.50

—*Snowdrop*. Large pure white flowers. Each \$2.50

—*balearica*. The "Fern Leaf Clematis" from the Balearic Islands. An elegant, Continued on Page 184

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Some Hard to Find Perennial Flowers

There are many very valuable flowers that are available only in very limited quantities and the supply is always uncertain. For this reason we have made an effort to grow many of them that can be wintered here in Michigan but at present we are restricted by the help problem to such an extent that instead of even being able to maintain the usual acreage, we actually have been forced this year to decrease our growing, in fact we have more weeds this year than in all of the past twenty years.

The following list is made up of seeds now in but in limited amount and each one very desirable. All are in the seed listings.

Anemone alpina sulphurea: Native of the European Alps. Deeply cut, fern-like leaves and 15 to 18 inch stems carrying singly 3 inch wide flowers of clear yellow, in spring and early summer. Flourishes in any well drained loam soil; resents root disturbance when once established. **ANEM-3S (W).** 50¢

Anemone Pulsatilla Mallenderi. A fine form of the Pasque Flower with immense shaggy, deep purple bells. Spring. Any deep, well drained soil and full sun; loves lime. **ANEM-46L(W).** 50¢

Aquilegia fragrans. (syn. *A. suaveolens*) Large purple-blue and white, sweet-scented flowers on 15 to 18 inch stems in summer; any soil, full sun. **AQUI-33(W).** 50¢

Aquilegia transylvanica. A neat, dwarf alpine species with blue flowers; nine inches high or less, summer. Well drained rock garden soil. **AQUI-47(W).** 50¢

Armeria corsica. There is no authority for this name and the plant does not grow in Corsica, but it is a dwarf Thrift with flowers of soft brick-red on nine inch stems and comes true from seed; any soil and full sun. **ARME-12P(W).** 50¢

Aster Farreri. One of the Chinese alpine Asters. Large deep purple, golden-centered flowers in early summer, 12-15 inches tall, any soil, sun. **AST-40(W).** 50¢

Campanula barbata. Seed saved from an extra fine form of the Bearded Bellflower of the European Alps. Nine to twelve inch stems each carrying several large, pendant, bearded bells of soft blue. Any well drained soil and full sun. **CAMP-13(W).** 50¢

Cotyledon oppositifolia. "Golden Chains" Dangling four inch racemes of small golden flowers in early summer. A grand wall plant. **COTY-7(W).** 50¢

Helleborus niger altifolius: The finest of all "Christmas Roses" and this seed was saved from selected, extra fine plants with immense pure white flowers, often four inches in diameter. Flowers in winter and earliest spring, grows in semi-shade and woodland conditions in any reasonably good soil. **HELB-10A(W).** 50¢

Meconopsis cambrica aurantiaca fl. pl. The double flowered, deep orange colored form of the Welsh Poppy; easy in any soil, even the poorest, and dry, sunny positions or even in half shade. The major proportion of the seedlings come true to type, but a few may be single or semi-double. **MECO-3A(W).** 50¢

Ononis rotundifolia. Uncommon shrub-let of the European Alps. Stiff little nine inch bushes and pink, pea-shaped flowers in summer. Full sun and any reasonably

(Continued on Page 183)

CLEMATIS - CODONOPSIS

CLARKIA: Continued from Page 181.

- Purple Prince. Very double rich purple flowers..... **CLAR-1P.** 15¢
- Salmon Queen. Best double salmon-rose..... **CLAR-1S.** 15¢
- White Prince. Best double pure white variety..... **CLAR-1W.** 15¢
- Novelty Blend. Careful blend of colors..... **CLAR-1X.** 15¢
- C. PULCELLA:** Grows 18" tall comes in different colors and fine for the border; HA
- alba. Pure white..... **CLAR-4W.** 15¢
- Single Mixed..... **CLAR-31S.** 15¢
- Double Mixed..... **CLAR-4DX.** 15¢
- Blend. Both single and double mixed..... **CLAR-4X.** 15¢

CLEMATIS. (KLEM-at-iss) Virgin's Bower. Ranunculaceae.

Woody perennial climbers thriving in a rich loamy soil on alkaline side. The seed should be stratified. The large flowered hybrids commonly grown, are increased by cuttings and these are best in partial shade. Mulch soil at base of plants.

- alpina. Fls blue-violet, 1/2" long, cl to 6 ft..... **CLEM-5.** 20¢
- columbianum. Blue or purple; 10 ft; June..... **CLEM-27.** 25¢
- crispa. Bluish purple, nodding, fragrant; June-Sept; 10'; Texas..... **CLEM-29.** 15¢
- deocoraefolia v. paniculata. White, 1" ac; cl. to 30 ft; HP..... **CLEM-31(F).** 50¢
- dioscoreaefolia v. robusta. (paniculata) Cl 30 ft; white; hardy in N..... **CLEM-31(S).** 50¢
- florida. Cl to 12 ft; creamy white, 4" ac; green band on back..... **CLEM-40(S).** 50¢
- lathyrifolia. Vigorous cl; inch wide panicles of white fls..... **CLEM-77.** 25¢
- ligusticifolia. Vigorous cl; inch wide panicles of white fls..... **CLEM-80.** 25¢
- montana. Cl to 25'; fls white turning pink, yellow stamens; fragrant..... **CLEM-86.** 25¢
- paniculata: see *C. dioscoreifolia* var. *robusta*. Correct classification now.
- patens. Cl to 12 ft; violet to white, 6" ac; Oz. \$1.00; 4 oz. \$2.25..... **CLEM-90(S).** 50¢
- Pitcheri. Fls urn-shape, purplish, 1" long..... **CLEM-92.** 25¢
- recta. An erect plant to 5 ft; fls white 1 in. across; fragrant..... **CLEM-98.** 25¢
- Scottii. Erect plant; fls urn-shape purplish brown; May-June; Wyo..... **CLEM-103.** 25¢
- serratifolia. Cl to 10 ft; fls yellow, purple stamens, Aug-Sept. Korea..... **CLEM-104.** 20¢
- tangutica. Golden C. Bright yellow fls, 4" ac; cl to 10 ft; N. China..... **CLEM-110(F).** 50¢
- Thunbergii. Climber; fls 2 in. ac; panicles; Rhodesia..... **CLEM-112.** 25¢
- Viticella. Cl to 12 ft; blue, yellow stamens, 2" ac; 4 oz. 90¢; 1b. \$2.00..... **CLEM-123(S).** 50¢
- Clematis Blend. All species..... **CLEM-X.** 20¢

CLEMATOPSIS. (klem-ah-TOP-sis)

Seeds offered come from South Rhodesia and are drought resistant growing in full sun..... These may not be hardy in the North.

- Stanleyii. Shock Headed Peter. Drooping white anemone-like fls; 4-5 ft..... **CLTP-1.** 30¢

CLEOME. (klee-OH-me) Spike Flower.

Easily grown from seed in May, germinates quickly. Thin plants to 2 ft; grows 4-5 ft. tall and makes showy plants in the border, flowering from June till frost. Try them as a hedge; half hardy annuals.

C. SPINOSA. (*C. gigantea* or *C. pungens*) Spider Flower.

- Pink Queen. Clear soft pink turning to apple-blossom; 5 ft..... **CLEO-5P.** 15¢
- Mrs. Colen Campbell. Pure white NEW this year; good..... **CLEO-5C.** 25¢
- lutea. Golden yellow fls; 3 ft; Colo..... **CLEO-3.** 15¢
- Mixed. All varieties..... **CLEO-X.** 15¢

CLETHRA. (KLETH-ruh) WHITE ALDER. Clethraceae.

Shrubs and small trees with fragrant white and pink flowers in terminal racemes or panicles in late summer. Sow seeds in flats in spring. Most are hardy in North.

- acuminata. Fls nodding racemes; Va-Ga; 15 ft; **Oz. \$1.50.** **CLET-1(S).** 50¢

It is our intention to have these lists perfectly accurate and we welcome corrections

CNEOREDIUM dumosum.

- dumosum. 2-4 ft sh; S. Cal; fls white followed by brown fruits..... **CNEO-1.** 15¢

COBAEA. (koh-BEE-ah) Polemoniaceae.

Tropical climbing shrub but in the North treated as an annual. It is used in baskets or for outdoor climbers. Tender.

- scandens..... Cl to 25 ft; violet-blue fls; TCL..... **COBA-2.** 15¢

COCHLOSPERMUM. (coch-lo-SPER-mum) Cochlospermaceae.

Tropical trees and shrubs; flowers in racemes or panicles. They are ornamental and suitable only for the far South. Flowers in March before leaves appear.

- gossypinum. Yellow Silk Cotton; Magnificent yel. fls in March..... **COCH-4(M).** 40¢

CODONOPSIS. (koh-doh-NOP-sis) Campanulaceae.

Perennials with shades of blue and yellow flowers with darker veins and blotches, a few climbers, and having a milky juice and heavy scent. Culture same as Campanulas but are not hardy in the North, requiring winter protection.

- assuriensis..... **COD-2.** 25¢
- clematidea. Bell-shaped fls with white and yellow center; 1'; HP..... **COD-1.** 20¢
- meleagris. Fls drooping, greenish yel, purple spots; erect; 18"; HP..... **COD-3(F).** 50¢
- ovata. Solitary fls bell-shaped, blue; 1 ft; HP..... **COD-4.** 25¢
- ovata. Semi-cl; soft blue bells; June; cool soil; sun..... **COD-4(W).** 30¢
- viridiflora. Cl, yellowish green fls purplish dots at base..... **COD-10.** 20¢

COELOGYNE. (see-HOJ-e-nee) Orchidaceae.

Tropical epiphytic orchids with long racemes of white or greenish-yellow flowers. They are grown under glass in moderately warm atmosphere; best in hanging baskets; soil mixture, osmundine and sphagnum.

- barbata. White with brown lip fringed with brown; Oct- Feb..... **COEL-2.** 50¢

COIX. (KOH-ix) Gramineae.

Tall grasses with broad leaves and bead-like seeds. These are used as low borders, for everlasting or dried grass and the seeds can be strung as beads.

- Lacryma-Jobi. Job's-Tears. TP but grow as annual; 12"..... **COIX-1.** 15¢

ORDERS FOR SEED MAY BE AS LOW AS ONE PACKET; ORDER AS NEEDED.
ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

COIX - COLEUS - COOPERIA

COLEUS. (KOH-lee-us) Labiatae.

These are showy annuals and perennials. Plants grown from seed are stronger and of bright colors. Sow seeds early in pans and keep warm. For bright coloring grow in full sun; they are used entirely as foliage plants both in boxes or as house plants.

- Brocade Strain. Large leaved, rich velvety colors.....COLE-1. 25¢
- Fringed Leaf, Mixed.....COLE-2. 20¢
- German Hybrids. Best German strain.....COLE-3. 25¢
- Gloria of Vichy. Especially strong in apricot and copper colors.....COLE-4. 25¢
- Large Leaved Strain. A French strain in bright colors.....COLE-5. 25¢
- Pride of Montferland. A new strain for market plants, bright colors.....COLE-6. 25¢
- Pyrenean Giants. Large robust plants, excellent for bedding.....COLE-7. 25¢
- Super Colossal. Copper shades, a fine strain.....COLE-8. 25¢
- Striped Empel. Leaves striped green, yellow and brown.....COLE-9. 25¢
- Rainbow Blend. Blend of all kinds.....COLE-X. 25¢

COLLINSIA. (ko-LIN-zee-ah).

Hardy annuals, attractive, free flowering; much used for edging and rock gardens. They prefer a dry location; seed can be sown in the fall or early in the spring.

- heterophylla (bicolor) Rose, white, lilac, blue; June-Oct; 15".....COLL-3. 15¢
- candidissima. All white flowers.....COLL-3C. 15¢

CONVOLVULUS. (kon-VOLV-yew-lus) Morning Glory Family.

Flowers similar to the Morning Glory and used for vines as they are. Some may become troublesome weeds and the field "Morning Glory" is *C. arvensis*.

- Crimson Rambler. Climber to 10 ft; crimson fls; HHA.....CONV-1. 15¢
- tricolor. Deep blue, yellow and white fls; HA.....CONV-22. 15¢
- Cambridge Blue. Clear azure-blue; 1 ft tall.....CONV-22C. 15¢
- Minor Dwarf Mixed. Bush type Morning Glories.....CONV-22MX. 20¢
- Lavender Roseette. Deep lavender variety of nice form.....CONV-24. 20¢
- Royal Ensign. Deepest blue; ideal bedder and edger; 1 ft; HA.....CONV-22R. 15¢
- Randi. Dainty RG species; 1 ft; pure white; sun; fol. silvery.....CONV-17. 20¢
- Convolvulus Blend. All kinds mixed.....CONV-X. 20¢

COOPERIA. (koo-PEER-ee-ah) RAIN- or PRAIRIE LILY Amaryllidaceae.

Bulbous night blooming plants with basal grass-like leaves. Flowers are fragrant and white. Not hardy and white. Not hardy in the North but can be taken up over winter in dry soil.

- pedunculata. Bulb; fls white tinged red; Texas.....COOP-3. 25¢

CORDYLINE. (kor-del-LYE-nee) DRACENA. Lilaceae.

Warm climate trees and shrubs with stiff narrow leaves, many having striped and colored leaves; grown in the greenhouse in the North where they are mainly used as pot plants or they can be grown out doors in the South

- indivisa. Green leaved species.....O.Z 60¢.....CORD-12. 20¢

COREOPSIS. (koh-ree-OP-sis) Compositae.

Annual and perennial plants with yellow, brown or rose flowers, blooming in the summer and fall, making ideal cutflowers as well as display in the border. The annual kinds are listed under Calliopsis, which see.

C. LANCEOLATA. Perennials to 3 ft, hardy and grown for cutflowers and border.

- New Gold. 100% double, rich golden yellow; 18", ideal for cutting.....CORE-12N. 15¢
- Double Sunburst. 1½-2 in. ac; golden yellow; comes 80% double.....CORE-12S. 15¢
- Mayfield Giant. Large golden yellow fls; larger ray petals.....CORE-12M. 15¢
- superba. Large single golden yellow fls; 2-3" ac; 3-4' tall.....CORE-12B. 15¢
- Coreopsis Blend. Above kinds mixed.....CORE-12X. 15¢
- grandiflora. Yellow rays; 2½" ac; 6"; HP.....CORE-11(F). 30¢
- insecta. S. Rhodesia. 4-5 in; golden yellow; 3 ft.....CORE-10. 15¢
- verticillata. Thread-leaf C. Deep yellow, heads 2" ac; 3 ft; HP.....CORE-30. 20¢

CORN -- ORNAMENTAL KINDS.

These ornamental corns are especially nice for children to grow; they are easy and the colors are interesting, besides they can be sold in the fall at a good profit.

Listed here are those sorts with colored kernels and used for ornamental purposes.

- Bassett's Indian Corn. The brightest colored kernels in all colors.....CORN-1. 20¢
- Strawberry Pop Corn. True red strawberry-shape; dark color.....CORN-2. 20¢

CORTADERIA. (kor-ta-DEE-re-ah) Pampas Grass. Gramineae.

Ornamental grasses and not hardy in the North. These thrive in rich light soils. For the North start indoors in Jan. or Feb. and grow on in pots. They are very effective.

- Selloana. (C. arentum) Tender ornamental grass; 20 ft; TP.....CORT-2. 20¢
- rosea. A type with pinkish plumes.....CORT-2R. 20¢

CORONILLA. (kor-oh-NIL-luh) Leguminosae.

Plants and shrubs, flowers in long umbels. They are grown out doors and in the GH.

- minima. Golden yel. frag. fls; procumbent sub-sh; 4"; HP.....CORL-9(F). 35¢

CORYDALIS. (kor-RID-al-is) Fumariaceae.

Easily grown annuals and perennials with interesting flowers similar to those of the Bleeding Heart, in yellow, blue, rose and purple.

- cava. Pink or white; 8 in; HP.....CORY-6(C). 30¢
- cheilanthisfolia. Lemon yellow; ferny fol, tinged maroon; 8"; HP.....CORY-7(B). 50¢
- lutea. For shady places; ferny lvs; golden fls; 1 ft; HP.....CORY-12. 20¢
- nobilis. Very early, golden yel; non-rampant; 10"; Siberia; HP.....CORY-16(B). 35¢
- pallida. Golden yellow with brown spots; 1½ ft; China.....CORY-22(F). 50¢
- ramosa.....CORY-24(F). 50¢
- species from Africa. A new unnamed species.....CORY-30. 30¢
- halicirifolia. Yellow, 1" long; 18"; China; HP.....CORY-32(F). 50¢
- Wilsonae. Silver fol; yellow plumes; lvs basal; China; HP.....CORY-40(B). 50¢
- Corydalis Blend. All species mixed.....CORY-X. 30¢

CORYPHA AUSTRALIS: see Livistonia australis.

You can order your seeds any way you wish, either by writing the full name down of the flower wanted or just using the symbol at the end of the line; it is easier and plainer with just the symbol but be sure to make it very plain and the correct one.

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Growing Ginseng and Golden Seal

By Walter Allgeyer, Michigan

These two wild woody plants, mainly used in medicines, if grown in a shady spot in the garden, are very lovely plants, easy to care for and both have pretty red berries in the late summer that are very decorative.

While the blossoms are small, the foliage of both are very dark green and stand up well all through the season.

Both grow quite easily from seed and like other perennials, are planted in late summer when the seed will come up the following spring.

Golden Seal has two small round leaves, while the Ginseng will have a small tri-part leaf much like ivy.

When more mature, Golden Seal has a leaf much like a Maple, only thicker and very dark green.

Ginseng has a five-part leaf, generally three on top of the foot high stem.

I have grown both of these lovely plants in the shade of two large Oak trees, near the trees where the shade keeps them happy, and give them but little care. In the fall the leaves cover the plants and then I throw a few bushes over them to hold the leaves over the winter. In the spring the leaves are well settled and then I take off the brush.

Golden Seal can be taken up and reset any time as can also the Ginseng, if one is careful but as Ginseng has a Carot-like root with a small soft top on the root from which the plants grow; one has to be careful not to break this off.

Both like a rich woods soil but they will grow well in most any good soil as long as it is soft and porous.

In planting seed, I clean a small place, dig a small trench one inch deep and place the seed about three inches apart in rows and cover. In the fall I see that the bed is well covered with leaves and in the spring some can be taken off and soon the little seedlings will be coming up.

In making a wild flower bed, you can plant them right in among other plants, as they need no special care. They look nice in among Trilliums, Indian Turnip and Blood root; most of these like the same soil and shade.

FEW NEW FLOWERS NOW AVAILABLE

(Continued from Page 182)

good soil. ONON-15(W). 50¢

Geum silvaticum. Handsome sub-alpine semi-woodland Geum with bright red flowers on 12 inch stems. GEUM-35(W). 50¢

Lathyrus luteus aureus. Dwarf Lathyrus with golden flowers in summer; full sun, any well drained soil; 12 inches or so high.

LATH-19A(W). 50¢

Onosma albo-roseum. Hairy gray leaves in dense clusters and many nodding, tubular, white, pink-tipped flowers in the spring and early summer; on 6 inch stems; a fine wall plant; sun. ONOS-1(W). 50¢

Saxifraga lingulata Albertii. Seed saved from a selected form of the lovely silver Saxifraga from the Maritime Alps of Europe. Lime encrusted, narrow leaves and long spikes of innumerable pure white flowers in early summer. A superb wall plant. Loves lime and sun. SAX-130A(W). 50¢

Scabiosa alpina. Neat little alpine Scabious with deep lavender flowers on six inch stems all summer. Any soil and full sun. SCAB-2(W). 50¢

GET EVERY ISSUE — \$2.00 PER YEAR

RARE VINES

CLEMATIS VINES Continued from Pg. 181
slender evergreen, the finely divided foliage being bronzy in winter. Flowers pale yellow with reddish spots, produced all winter; for the South Each \$1.50

—**campaniflora**. A vigorous climber, native of Portugal. Its small, bell-shaped blue-tinted flowers, borne profusely from July to September, are very effective in the mass. Each \$1.75

—**chrysocoma**. A beautiful species resembling the well known *C. montana* but less rampant. The pink-tinged, white flowers are borne profusely in early May and June, and successively on the young growth in late summer. Each \$1.50

—**Fargesii**. A vigorous Chinese species well distinguished by its pure white flowers 1½-2 inches across, being 6-petaled and appearing from June to Sept. Each \$3.00

—**Flammula**. A slender, densely branched species. From August to October the small white, sweetly fragrant flowers are abundantly scattered over the whole plant. \$3.00

—**florida Sieboldii**. (bicolor) A striking and very rare plant. Flowers 3 inches across, white, with a conspicuous center boss of purple petaloid stamens. Each \$3.50

—**Jouiniana**. (*heracleifolia* x *Vitalba*) A very vigorous, somewhat shrubby climber. Especially beautiful in the autumn with its profusion of small, white, lilac-tinted flowers. Each \$1.25

—**koreana lutea**. A slender climber with flowers 1½" across, yellow, with black stamens, appearing from late July to September. Each \$3.00

—**macropetala**. A charming spring and early summer flowering species of the Atragene section, in which the conspicuous, petaloid stamens add greatly to the beauty of the large, violet-blue flowers. Each \$1.75

—**Markhamii**. A beautiful lilac-pink variety. Each \$1.75

—**Meyeniana**. This Chinese species resembles *C. Armandii* in foliage and in bearing panicles of rather small white flowers; not hardy in North. Each \$2.00

—**Rehderiana**. A charming species with cowslip-scented flowers which are produced in panicles during summer and autumn. Each \$1.75

—**tangutica**. Considered to be the best yellow-flowered Clematis, having flowers 2½" across. Each \$3.00

—**abusiuscula**. The commonly cultivated variety: A delightful plant with slender but strong growths, in autumn producing an abundance of lantern-shaped rich yellow flowers, the later ones intermingled with masses of feathery seed-heads. \$1.50

—**uncinata**. The daintiest of the Chinese evergreen species. Leaflets small, ovate glaucous beneath; flowers about 1" across, white, fragrant, borne in panicles; not hardy in the North. Each \$3.00

CLEMATOCLETHRA.

—**integrifolia**. A rare twining shrub allied to *Actinidia*. The small, white flowers produced in June, are fragrant. Reaches a height of 20-25 feet. Each \$1.75

—**strigilosa**. One of the rarest species of this little known genus. Each \$2.00

COCCULUS trilobus.

An extremely variable Asiatic twining shrub. Leaves entire or lobed, small or large, varying from orbicular to ovate-acuminate, persisting and retaining their bright green color until late autumn. \$1.75

HEDERA. Ivy. We can supply many kinds especially some 18 varieties of *H. Helix*. All priced at \$1.25 each; 6 plants for \$6.00

LAPAGERIA.

This glorious evergreen twiner requires the protection of sheltered wall and partial shade. Lime free soil is necessary. The rose-crimson flowers are like waxen lilies; not hardy in North. There is also a white variety. Each \$3.00

LONICERA.

Honeysuckle. The climbing members of this family are very ornamental. We offer here only a very few, those but seldom seen.

—**arizonica**. Very rare in cultivation, the tubular flowers are of almost regular shape

Continued on Page 185

COSMOS - COTONEASTER

COSMOS. (KOS-mos) Compositae.

Showy late flowering annuals and perennials, closely allied to the Dahlia. They are easily grown and thrive even in poor soils. Useful both in the border and for cutflowers.

C. BIPINNATUS: Half hardy annuals to which belong the commonly known garden forms. Sow direct or may be started indoors. Height 8-10 feet.

—**Dazzler**. Pretty crimson; 4 ft tall.....COS-1D. 15¢

—**Pinky**. New clear rose-pink.....COS-1P. 15¢

—**Radiance**. Deep rose with crimson ring; a high class new variety.....COS-1R. 20¢

—**Blend**. All the Sensation types, above, mixed.....COS-1X. 15¢

TRUE or EARLY FLOWERING TYPE: A superior garden strain of large size but early.

—**Crimson Queen**.....COS-2C. 15¢

—**Rose Queen**.....COS-2Z. 15¢

—**White Queen**.....COS-2W. 15¢

—**Mixed Queen**. Above colors carefully blended.....COS-2X. 15¢

HYBRID VARIETIES: These are not as tall growing; excellent in border and cutting.

—**Orange Flare**. Large orange flowers.....COS-3F. 15¢

—**Orange Ruffles**. Ruffled petals; pretty.....COS-3R. 15¢

—**Yellow Flare**. Rich yellow.....COS-3Y. 15¢

—**Mixed Hybrids**.....COS-3X. 15¢

OTHER COSMOS TYPES:

—**Double Crested**. Large double crested flowers in white, pink and crimson.....COS-4X. 20¢

—**Late Mammoth Mixed**. Large single type best for the South.....COS-5X. 15¢

—**Double Mixed**.....COS-7X. 15¢

—**Peerless, Double Mixed**.....COS-8X. 15¢

—**Cosmos Blend**. All kinds mixed.....COS-X. 10¢

COSTUS. (KOS-tus) SPIRAL FLAG. Zingiberaceae.

Tropical perennials with red, yellow and white flowers in dense spikes. Rich, moist soil. For the far South only.

—**speciosus**. White with yellow center; 5 in. spikes; India; 10 ft; TP.....COST-5. 25¢

COTONEASTER. (koh-toh-ne-AS-ter) Rosaceae.

Temperate zone shrubs, mostly from China, very ornamental, but many are not hardy in the far North. They like a sunny position and well drained soil.

—**alpina**.....COTN-1(F). 50¢

—**acuminata**. Pinkish fls in clusters; 12 ft; this is hardy.....COTN-1. 25¢

—**adpressa**. Prostrate decid sh; pinkish fls; bright red fr; HSh.....COTN-3(F). 50¢

—**bullata v. microphylla**. Decid. sh. to 6 ft; pinkish fls; lvs. 5" long....COTN-10M(F). 50¢

—**congesta**. 3 ft ev. sh; solitary white fls; bright red fr; HSh.....COTN-13(F). 50¢

—**Dammeri**. Prostrate evergreen; white fls; bright red fr; HSh.....COTN-15(F). 50¢

—**frigida**. Fls white in dense clusters; fr bright red; South only; 20'.....COTN-24. 25¢

—**humifusa**: see *C. Dammeri*.

—**microphylla**: see *C. bullata*.

—**rotundifolia**. Evergreen, fls white in clusters; fr red; 12 ft.....COTN-55. 25¢

—**Cotoneaster Blend**. All kinds offered, mixed.....COTN-X. 25¢

CORTUSA. (kor-TOO-suh) Primulaceae.

Perennials with rose and yellow flowers in umbels. They are especially good in rock gardens and require some winter protection in the North.

—**Matthioli**. Nodding rosy purple fls; 6"; HP.....CORU-1(F). 50¢

—**pekinensis**.....CORU-1P(F). 50¢

CRATAEGUS. (kra-TEEG-us) HAWTHORN, THORNAPPLE. Rosaceae.

Fine specimen shrubs and trees, nearly all of which are hardy in the North. They come very true from seed which germinates slowly and should be stratified.

—**Crus-galli**. Cockspur T. Fls white tinged with red; fr red; 20'; hardy.....CRAT-16. 25¢

—**intricata**. (*C. coccinea*) Dark glossy lvs; fr large scarlet; 15 ft.....CRAT-35. 25¢

CRAWFURDIA. (craw-FUR-de-ah) Gentianaceae.

Twining plants from the Himalayas and allied to the Gentians, which see for their culture. They are not hardy in the North but grow well in California. They are rare in American gardens.

—**japonica**. Fls dull greenish; fleshy red fr; very ornamental; vine; HHP.....CRAW-1. 35¢

—**speciosa**. Fls blue, funnel-shape; the hardiest; vine; HHP.....CRAW-3. 35¢

CREMANTHODIUM. (cre-man-THOD-ee-um).

—**Thompsonii**. Fls lemon-yellow, 1¾" ac.....CREM-5. 25¢

CREPIS. (KRT-pis) HAWK'S-BTARD. Compositae.

Flowers are in yellow, red or orange heads, and grown in the border. Light loam soil and full sun.

—**aurea**. Orange flower heads; 12"; Alps; HP.....CREP-1(F). 40¢

—**glomerata**. Fls yellow; black anthers; 6-10" high.....CREP-5. 25¢

—**incarna**. Pink fls; 10' for RG; HP.....CREP-7. 40¢

—**Jacquini**.....CREP-8(F). 50¢

—**pannonica**.....CREP-11(F). 50¢

—**siberica**.....CREP-14(F). 50¢

CROCUS. (KROH-kus) SAFFRON. Iridaceae.

While many species of *Crocus* are ordinarily purchased as bulbs, a great deal of pleasure can be had in raising them from seeds, especially in the new hybrids one can grow.

—**Fleischeri**. Fls white striped lilac; a rare species for RG.....CROC-14. 30¢

—**speciosus**. Fls lilac striped bluish, autumn flowering.....CROC-33. 25¢

—**Tomasianus**. Fls pale reddish blue, spring flowering; naturalizes.....CROC-39. 25¢

—**Crocus Blend**. Mixture of species.....CROC-X. 20¢

CROSSANDRA. (kros-SAND-ruh) Acanthaceae.

Tropical plants and shrubs grown outdoors in the far South or under glass in the N. —**mlotica**. South Rhodesian species.....CROS-3. 25¢

CROTALARIA. (kroh-tah-LAY-re-ah) RATTLE-BOX. Leguminosae.

Plants with Sweet Pea-like flowers and swollen pods. Soak seeds in warm water before planting. In the North they are greenhouse plants.

—**capensis**. Golden yellow Sw. Pea; 5 ft Sh; soak seeds; TSh.....CROT-6. 25¢

—**refusa**. Golden Sweet Pea. Pretty, golden yellow fls; TA.....CROT-12. 20¢

—**Rhodesiae**. Procumbent, golden orange; RG; sun, light soil; TSh.....CROT-14. 25¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

CUPHEA - CYPRIPIEDUM

CRUCIANELLA. (kroo-shee-an-NELL-ah) CROSSWORT. Rubiaceae.

Annuals and perennials native of Medit. regions and W. Asia grown in partial shade in the rockery.

—*stylosa*. Pink fls, plant prostrate; Persia; HHP..... **CRUC-6(C)**. 30¢

CUCUMIS. (KEW-kew-mis) Cucurbitaceae.

Tender annual vines of which the cucumber and melon belong. C. Melo is the muskmelon. They are mainly grown for their edible fruits as well as for ornament.

—*Melo v. Dudain*. Pl small; fr size of orange, marbled; highly perfumed..... **CUCU-4D**. 20¢

CUNONIA. (cu-NON-ee-ah) Cunoniaceae.

Trees and shrubs from southern hemisphere. Ornamental and suitable for far South.

—*capensis*. Handsome S. Af. tr; white like bottlebrushes above fol.... **CUNO-2(M)**. 35¢

CUPHEA. (KEU-fe-ah) Lathraceae.

Tropical plants mostly greenhouse grown in the North but pretty annuals for outdoors in the South. They are nice plants for boxes and baskets.

—*Hybrids, Butterfly*. Many colors; very pretty; 2'; TA..... **CUP-3B**. 15¢

—*Firefly*. Beautiful bright scarlet; 2'; TA..... **CUP-3F**. 15¢

—*igneae*. (platycentra) Cigar-Flower. Bedding; fls red, white; 1'; TA..... **CUP-5**. 20¢

—*lanceolata*. Purple fls; Mexico; 4 ft; TA..... **CUP-7**. 15¢

—*Llavea v. miniata Vermilion*. Brilliant vermilion fls; 1 ft; TA..... **CUP-8V**. 20¢

—*Cuphea Blend*. All kinds mixed..... **CUP-X**. 15¢

CURCULIGO. (kur-KEW-lig-oh) Amaryllidaceae.

Stemless plants, Amaryllis-like, with short thick root stock. They are popular greenhouse foliage plants or outdoors in the South. Require high temperature, plenty of moisture and a rich soil.

—*capitulata*. Dark green lvs 3 ft. long; palm-like; fine for pots..... **CURC-1**. 30¢

CURTONUS. (kur-TON-us) Iridaceae.

Allied to Antholyza, Chasmanthe and Anapalina. Only one known species. Grow same as you would Gladiolus.

—*paniculatus*. Lvs 2 ft long, 3" wide; red-yellow fls; 4 ft; TP..... **CURT-1**. 25¢

CYANANTHUS. (cy-NAN-thus) Campanulaceae.

Small Himalayan plants, grown in the rock garden. They are related to Codonopsis but not climbing, flowering in late summer. Hold over first winter in pots; needs good growth first year.

—*lobatus*. One of the best; fls large blue, 6"; HP..... **CYAN-4**. 30¢

—*microphyllus*. (integer) Gay blue starry aut. fls; tr. stems; 2'; HP **CYAN-8(B)**. 50¢

CYCLAMEN. (SIK-lam-en) Primulaceae.

Low greenhouse plants, some species hardy outdoors. The florist Cyclamen, C. indicum, is a very popular greenhouse pot plant.

CYCLAMEN INDICUM: Sow in Sept., requires 15-18 months for good 6-8" pot plants.

—*Baardse's Wonder*. Salmon with white border..... **CYCL-9B**. 50¢

—*Bonfire*. Brilliant salmon..... **CYCL-9F**. 50¢

—*Glory of Wandsbeck*. Dark crimson..... **CYCL-9G**. 50¢

—*Rose of Marienthal*. Soft rose with carmine eye..... **CYCL-9M**. 50¢

—*Salmon-scarlet*. Improved America..... **CYCL-9S**. 50¢

—*White with Crimson Eye*. Popular color..... **CYCL-9E**. 50¢

—*White Wonder*. Largest and best white..... **CYCL-9W**. 50¢

—*New Ruffled, Mixed*. Some should be in every planting..... **CYCL-9RX**. 50¢

—*Rococo, Mixed*. Extra large flowered strain..... **CYCL-9CX**. 50¢

—*Cyclamen Blend*. Hand made blend for greenhouse growing..... **CYCL-X**. 50¢

\$9.00 per 1,000 seeds.

CYCLAMEN SPECIES:

—*europaeum*. Bright red fls; fragrant; 4-5"; HP..... **CYCL-6**. 50¢

—*neapolitanum album*. White hardy Cyclamen; autumn flowering; 4"; HP..... **CYCL-12**. 50¢

CYMBALARIA. (sim-bah-LAY-ree-ah) Scrophulariaceae.

Creeping herbaceous perennials very much like Linaria. They are tender and should be grown as annuals in the North. Nice basket plants for shady places.

—*muralis*. Kenilworth Ivy..... Lilac-blue fls; basket pl for shade..... **CYMB-3**. 15¢

CYNOGLOSSUM. (sin-oh-GLOS-um) Hound's Tongue. Boraginaceae.

Annual, biennial and perennial plants, grown for cut flowers.

—*amabile*. Deep blue; 2 ft; HB..... **CYNO-1**. 15¢

—*Firament*. A compact blue variety; 15"; HA..... **CYNO-1F**. 15¢

—*coelestinum*. Blue fls; 2 ft; especially for bee food; **Lb. \$1.50**..... **CYNO-3**. 15¢

—*Cynoglossum Blend*. All kinds..... **CYNO-X**. 15¢

CYTISUS. (SIT-iss-us) BROOM Leguminosae.

Shrubs very similar to Genista. They are not hardy in the North but can be forced in the greenhouse in a cool place. Many are very showy. Thrive in full sunshine, not too rich a soil. If interested in seed by the pound, write for latest price.

—*austriacus*. Bright yellow fls, terminal heads; July-Aug; 3 ft; HHP..... **CYTS-5**. 50¢

—*decumbens*. Prostrate, yellow fls; May-June; 8 in; HHP..... **CYTS-16**. 25¢

—*hirsutus v. demissus*. VERY RARE; Best of all the really dwarf, prostrate rockery brooms; trailing stems and immense brown and deep orange-yellow fls in summer; really rare and handsome; not difficult; sun or poor soil..... **CYTS-24(W)**. 75¢

—*multiflorus*. White Spanish B. White fls; Spain; 3 ft; HHP..... **CYTS-33**. 50¢

—*White Gem*. Best white variety; HHP..... **CYTS-33W**. 50¢

—*nigricans*. Yellow fls in long terminal racemes; July-Aug; 4 ft; HHP..... **CYTS-36**. 50¢

—*praecox*. Hybrid: multiflorus x purpurea; Yellow; May; 10 ft; HHP..... **CYTS-38**. 50¢

—*purpureus*. Purple fls; May; 2 ft; HHP..... **CYTS-44**. 50¢

—*radiatus*: see *Genista radiata*.

—*ratibonensis*. Bright yellow; May-June; 6 ft; HHP..... **CYTS-46**. 50¢

—*scoparius*. Scotch B. N. Eng. seed; yellow spring and sum; 10 ft; HHP..... **CYTS-48**. 50¢

—*New Vari-colored hybrids*. HHP..... **CYTS-43V**. 75¢

—*supinus*. Yellow fls fading brown; terminal heads; summer; 3 ft; HHP..... **CYTS-52**. 50¢

—*Cytisus Blend*. All kinds mixed..... **CYTS-X**. 40¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

RARE VINES

LONICERA Continued from Page 184

resembling those of the Scarlet Trumpet Honeysuckle, but are yellow tinged with scarlet. **Each \$1.75**

—*efrusca*. Beautiful and vigorous semi-evergreen species, producing in June and July large paniculate clusters of fragrant flowers which open cream and deepen to yellow, tinged purple. **Each \$1.25**

—*subaequalia*. A Chinese species, very rare in cultivation and related to the common Honeysuckle but with more funnel-shaped flowers; berries red. **Each \$1.50**

—*Tellmanniana*. (tragophylla x semper-virens) This remarkable hybrid is a vigorous grower, with large, oval leaves. Flowers about 2" long, rich yellow, tipped with red, scentless, borne in large clusters in June and July. **Each \$2.00**

MUEHLENBECKIA variana. A common twining plant with dark, wiry, and interesting laced stems and small, fiddle-shaped leaves. **Each \$1.25**

MUTISIA.

Beautiful S. American evergreen plants, climbing by means of tendrils, all have large, daisy-shaped flowers; not hardy in the North.

—*Clematis*. Tender tall evergreen species with compound leaves; flowers rich red. **Each \$1.50**

—*decurrens*. Sometimes called "Climbing Gazania" because of its bright orange-scarlet flowers, which are 4" across. Leaves lanceolate, glaucous. Favors partial shade, not hardy in the N. **Each \$2.00**

—*ilicifolia*. The "Holly-leaved Mutisia". Flowers pale mauve or pink borne all summer and autumn. **Each \$1.50**

—*oligodon*. Closely resembles above but more compacted growth. Flowers clear pink. **Each \$2.00**

PERIPLOCA graeca.

Silk-vine. A vigorous, twining shrub, reaching 40 feet. Flowers about 1" across, purple-brown with greenish yellow reverse, produced in clusters during July and August. **Each \$2.00**

POLYGONUM Aubertii.

This Chinese species is as vigorous and handsome as P. baldschuanicum and equally showy when covered with its panicles of white or pink-tinged flowers in summer and autumn. **Each \$1.50**

—*baldschuanicum*. A beautiful rampant twining shrub, invaluable for covering unsightly objects in the shortest possible time. Flowers white flushed with pink, borne in innumerable, large panicles all summer and autumn. **Each \$1.50**

PIONEER SEED COMPANY

DIMONDALE, MICHIGAN

POT STAKES

3 inch: 90¢ doz; 250 for \$4.00.

Painted stakes 3/8 inch wide; prepaid.

4 inch: 65¢ per 100; 1,000 for \$4.25.

5 inch: 70¢ per 100; 1,000 for \$4.50.

8 inch: \$1.00 per 100; 500 for \$4.75

10 inch: \$1.15 per 100; 250 for \$2.50

SPECIAL GARDEN STAKES:

7/8 inch wide, painted white:

8 inch: \$1.20 per 100; 250 for \$3.00.

1 1/8 inch wide; these make an attractive

and cheap garden stake.

12 inch: Each 3¢; 25 for 55¢; 100 for \$2.00.

COPPER WIRED TREE, SHRUB TAGS:

3 1/2" long, 5/3" wide, for tagging trees and shrubs; painted white.

70¢ per 100; 1,000 for \$5.50.

PIONEER SEED COMPANY

Dimondale, Michigan.

We would like to send you every issue but it will be necessary to subscribe. Just \$2.00 per year NOW!



RECOMMENDED GARDEN BOOKS

THE IRIS \$3.00
N. Leslie Cave. Demy 8vo; 4 colored plates and 32 pages of illustrations in monochrome, all from photographs, and many drawings in line.

The different species of Iris have been undeservedly neglected in gardens and Mr. Cave's thorough study has valuable and unique features. In addition to cultural hints and an authoritative table of all known species, he gives lists of the various species graded according to ease of cultivation and maps showing their native habitat.

He deals fully with the tall-bearded Iris, covering methods of planting, cultivation and after care, diseases, and selection of varieties; he also gives advice on the breeding of new varieties, and includes a chapter on elementary genetics.

The color plates show: Strathmore; a Bed of Irises; a Clump of Great Lakes; Iris in the Author's Garden. The Monochrome Plates show: Iris reticulata, J. S. Dijt; Iris reticulata Cantab; I. histrioides, the major form; I. Grant-Duffii; I. filifolia; I. graeberiana; I. cristata; I. gracilipes, life size; I. tectorum; I. japonica; I. Wattii; I. atrofusca; I. hoogiana; Calchas, regilio-cyclus hybrid; I. innominata; I. douglasiana; I. Tranquil Dale (innominata Douglasiana); I. sintenisii; First flowers on one-year-old seedlings; I. kerneriana; What is Wrong with these Irises?; I. vericolor v. Kermesina; I. kaempferi; I. unguicularis; Blue Shimmer; Pinnacle; Staten Island; Pretty Pansy; Truly Yours; Lady Mohr. Besides there are line drawings of seed pods; Iris flower showing its parts; Six Types of Branching.

AUSTRALIAN WILD FLOWERS 75¢
National Handbook 9, 32 pp, 23 illus. (16 in full color). Melbourne, 1944. Gives notes on garden cultivation and identification lists of 106 wild flowers.

SEED and POTTING COMPOSTS. \$1.75
By Lawrence and Newell. Rev. 4th edition, 160 pp., 30 figs., 122mo., cloth. London, 1950. New in dust wrappers.

The authors are the developers of the standardized John Innes composts. Their book shows how those remarkable composts save time, reduce the hazards of raising difficult plants from seed and simplify proper potting on the seedlings or cuttings to maturity. Complete formulas and methods of preparation are given.

POPULAR ORCHID GROWING. \$1.75
This is of special interest to the amateur Orchid grower and covers the growing of these flowers completely. A more complete description will be given in the next book listing.

THE GARDEN FRAME. \$1.50
184 pp. 8 pp plates, 38 figs in text, London (1947).

How to start plants in the frame, wintering over, and all those problems connected with protecting plants and getting them started while the weather is still chilly.

PROPAGATION of HARDY TREES and SHRUBS. \$1.75
G. M. Taylor. 107 pp. 8 pp plates, Oxford, 1947.

A book designed to meet the needs of the amateur. Tells how to make cuttings, layers, grafting, etc. What shrubs and trees can be propagated from seed and how best to treat the seed in order to obtain the best results.

ROSES IN COLOR and CULTIVATION
261 pp. 80 color plates, 36 figs in text. London (1947). by T. C. Mansfield. Pictures and describes many of our most well known roses, also species roses: Notes on cultivation are included. A truly beautiful color plate book. \$5.00

(Continued on Page 187)

CYPHOMANDRA - DAHLIAS

CYPHOMANDRA. (sy-foh-MAND-ruh) Solanaceae.

South American tropical shrubs and trees with flowers in racemes or cymes followed by many seeded berries. Grow same as Egg Plant. Hardy only in the far South.
—betacea. Tree Tomato. Grows 10 ft high; the fruits are edible; TP..... CYPH-1. 25¢

CYPRIPEDIUM. (sip-rip-PEED-ee-um) LADY SLIPPER. Orchidaceae.

Terrestrial orchids hardy in the North.
—Calceolus. Yellow Eurasian Lady Slipper; Styria..... CYPR-4. 50¢
—pubescens. Smaller with smaller fls; deeper madder-purple s.&p..... CYPR-4P(F). 75¢

CYPRUS. (sy-PEE-rus) Galingale. Cyperaceae.

Annuals but mostly perennials; leaves grass-like; flowers in spikelets. They are grown in ponds as pot plants.
—alternifolius. Umbrella Plant. Splendid plant for water edge; 3-4'; TP..... CYPE-2. 20¢

DABOECIA. (dab-oh-EESH-ee-uh) IRISH HEATH. Ericaceae.

One evergreen heath-like shrub suitable for the rockery. It requires winter protection in the North. Thrives in a peaty acid soil.

—hybrid. Pink to rose; 6-12 in. high; long bloomer; HP..... DAB-1H. 25¢

DAHLBORG DAISY: see Thymophylla.

DAHLIA. (DAL-yah) Compositae.

Tender perennials. The growing of them from seed is an interesting undertaking and many new forms and varieties can be developed. Start seed indoors for early flowers.

—Coltress Hybrids. Dwarf single, blooming in 4 months from seed..... DAHL-2. 20¢
—Scarlet Gem. Profuse blooming; scarlet fls..... DAHL-2S. 20¢
—White. Pure white..... DAHL-2W. 20¢
—Yellow Gem. Rich yellow variety..... DAHL-2Y. 20¢
—Collarette Hybrids. Large semi-double flowers..... DAHL-3. 20¢
—Decorative Giants. Exhibition strain from newest varieties..... DAHL-4. 25¢
—Gem. Large flowering hybrids in dwarf form; select..... DAHL-2G. 20¢
—Giant Hornsvelt Hybrids. Immense do and semi-do; true from seed..... DAHL-2G. 20¢
—Mignon. Very large single fls in bright colors; 18"..... DAHL-6. 25¢
—Queen of Moorland. Dwarf, blacklvs; double; Feb seed bl in July 18"..... DAHL-9. 25¢
—Unwin's Dwarf Hybrids. Semi-double and double fls; 24"; bright colors..... DAHL-7. 25¢
—Single Varieties Mixed..... DAHL-8X. 20¢
—Dahlia Blend. All kinds mixed..... DAHL-X. 20¢

DAPHNE. (DAFF-nee) Thymelaeaceae.

Small deciduous and evergreen shrubs especially valuable for their fragrant flowers. Thrive in a well drained sandy loam well supplied with leaf mold. They are not all hardy in the North and some are grown in the greenhouse. Seeds best sown soon after ripe or stratify. Use lime free soil.

—acutifolia. Grown for its showy scarlet berries; 1½" long; 2"; HP DAPH-2(B). 50¢
—alpina. White or pinkish fls; May-June; terminal clusters; 1 ft; HSH..... DAPH-1. 30¢
—Laureola. Spurge-Laural. Yellowish green fls; ev; 3 ft; HSH..... Lb. \$6.50 DAPH-15. 25¢
—Mezereum. Decid; fls lilac-purple, frag; fr. scarlet; 4 ft; HP..... DAPH-16(F). 40¢
—oleoides. White or pale lilac fls; 3 ft; evergreen; TSh..... DAPH-20. 25¢
—alba. White flowers and yellow fruits..... DAPH-16A(F). 50¢
—rubra. Reddish purple flowers; Lb. \$7.50..... DAPH-16R. 25¢
—Ruyschiana. Blue fls; 2 ft; Siberia; HP..... DRPH-21(C). 40¢
—Daphne Blend. All species mixed..... DAPH-X. 20¢

DATURA. (dah-TEU-rah) Solanaceae.

Annuals and perennials found in warm regions, some of which are ornamental on account of their large trumpet-shaped flowers. They should be treated as tender annuals in northern part of the U. S. Start early indoors.

—arborea. Angel's Trumpet. Small trees; lge white fls; musk-like odor..... DATU-1. 20¢
—Black..... DATU-31. 15¢
—ferox. Light blue fls..... DATU-9. 20¢
—innoxia..... DATU-10. 20¢
—Metel. Large double whitish fls, purple calyx, 5'; TA..... DATU-11. 20¢
—caerulea. Blue flowers of above..... DATU-11C. 20¢
—Mixed. White and blue fls..... DATU-11X. 15¢
—meteloides. Fls white tinged rose; fragrant; 5 ft; TP..... DATU-13. 20¢

DAUBENTONIA. (dau-ben-THON-ee-ah) Leguminosae.

Shrubs and trees with pinnate leaves and yellow or rose flowers in racemes followed by 4-inged or -angulad pods; not hardy in the North.

—texana..... DAUB-3. 25¢

DELONIX. (del-LON-ix) ROYAL POINCIANA. Leguminosae.

Trees with showy orange and scarlet flowers in racemes. Grown only in the far South. They have been classed, incorrectly, as Poinciana and Caesalpinia. D. regia is the commonly grown Royal Poinciana of the South.

—regia. Very showy; grows to 40 ft; Madagascar; red fls..... DELO-1(M). 35¢

DELPHINIUM. (del-FIN-ee-um) LARKSPUR. Ranunculaceae.

A large number are showy garden flowers but the common garden forms make up the greater part of the plantings. Seed can be planted anytime for flowering plants the following year. Fresh seed can be had in August. Seed purchased should always be planted promptly upon receipt, otherwise it should be kept in your refrigerator. Seed pans should be placed in a warm and dark part of the room, with a nite temperature of around 60 degrees.

PLEASE NOTE: All Delphinium seed received from us should be either planted immediately or placed in a sealed jar and kept in the refrigerator till planting time.

PACIFIC GIANT SERIES: These are the most popular of all the American Delphiniums. They are about 65% mildew resistant and 100% double.

—Black Knight. Darkest violet with black bee; 2½" across..... DELP-1K. 30¢
—Blue Bird. True blue with white bee..... DELP-1B. 30¢
—Blue Jay. Clear medium to dark blue with dark contrasting bee..... DELP-1J. 30¢
—Blue Shades. All the blue series with later varieties..... DELP-1BS. 30¢
—Cameliard. Clear lavender self with white bee; 3" flowers..... DELP-1C. 30¢
—Galahad. Giant white with white 3" flowers bee..... DELP-1W. 30¢

DELPHINIUMS: Continued on Page 187

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

DELPHINIUMS - DESMODIUM

DELPHINIUMS: Continued from Page 186

- Guinevere. Clear pink-lavender self with white bee; 3" flowers.....DELPH-1G. 30¢
- King Arthur. Rich royal purple, large white bee.....DELPH-1A. 30¢
- Lancelot. Clear lilac self with white bee; a rare Delf color.....DELPH-1L. 30¢
- Percival. Large glistening white, strong contrasting black bee.....DELPH-1P. 30¢
- Round Table. All the colors plus many beautiful hybrids.....DELPH-1R. 30¢
- Summer Skies. Light heavenly blue with white bee.....DELPH-1S. 30¢
- Series Blend. Hand made blend of the above.....DELPH-1X. 30¢

ANY OF THE ABOVE SERIES: ¼ Oz. \$1.00; Ounce \$3.00; ¼ Lb. \$9.00.

- Blackmore and Landon Type. The English strain of giants.....DELPH-2L. 30¢
- Hollyhock Strain. California strain of light shades.....DELPH-2H. 30¢
- belladonna, True. Clear blue; these will do fine in hot sections.....DELPH-2B. 25¢
- Blue Grotto. Deep indigo-blue; 3 ft; excellent for cutting.....DELPH-2G. 25¢
- Cliveden Beauty. Lovely turquoise blue; excellent for cutting; 3 ft.....DELPH-2C. 25¢
- Improved. Deep blue.....DELPH-2V. 25¢
- bellomusum. Rich deep blue with white bee; 2' fls; cutting.....DELPH-2M. 25¢

D. CHINENSIS: While these are perennial they are best treated as annuals from early started seed. They are robust growers and rarely need staking; fine for cutting.

- Blue Mirror. NEW type; light blue, without spurs; facing upwards.....DELPH-3M. 25¢
- Blue Butterfly. Dwarf; ultramarine-blue; 12" tall.....DELPH-3B. 25¢
- White Butterfly. Blooms first year; white fls; for bedding or border.....DELPH-3Y. 25¢
- Azure Fairy. Dwarf; azure-blue; 12".....DELPH-3A. 25¢
- Cambridge Blue. Rich belladonna blue; 15".....DELPH-3C. 25¢
- Tall Blue. 24-30 inches tall; for cutting.....DELPH-3T. 25¢
- Tall White. 2-3 feet tall; white flowers; bedding or cutting.....DELPH-3W. 25¢
- Dwarf Mixed. Plants 1-1½ ft. tall.....DELPH-3DX. 25¢

DELPHINIUM SPECIES:

- bicolor. Erect western; 20 inches; blue; dies in summer.....DELPH-9. 25¢
- cardinale. Scarlet D. Erect, 2-3 ft; bright scarlet with yell w pet; T.....DELPH-16. 25¢
- cashmerianum. Dw. Delphinium. Blue fls; 10"; RG; Himalayas; HP.....DELPH-20(B). 50¢
- decorum. Deep purple fls; 4-6" for the rock garden.....DELPH-32. 30¢
- elatum. Candle Larkspur. To 6 ft; blue fls; HP.....DELPH-40(F). 50¢
- grandiflorum. Blooms first year; brilliant blue; RG; 1 ft; HP.....DELPH-46. 25¢
- incanum.....DELPH-52. 30¢
- macrocentron. From S. Rhodesia; 5'; fls hanging blue or yellow 5 ft.....DELPH-58. 50¢
- Mensiesii. Deep blue; western species; 4-6 ft; HP.....DELPH-59. 40¢
- nudicaule. Chamois. Long spurred; fine rock garden; 1 ft; HP.....DELPH-62C. 30¢
- Scarlet. Red Larkspur; 1 ft; HP.....DELPH-62S. 30¢
- orientale. Violet-blue; E. Europe; HA.....DELPH-65. 50¢
- paniculatum. Violet-blue fls; 3 ft; HA.....DELPH-69. 20¢
- Parryi. Deep blue; S. Calif.; 3 ft.....DELPH-71. 30¢
- yunnanense. True sp. deep blue; long racemes; China; 3'; HP.....DELPH-104(F). 75¢
- Zalil. Primrose yellow fls; 2 ft; HP.....DELPH-105. 50¢

DESMODIUM. (des-MOH-dee-um) TICK TREFOIL. Leguminosae.

Plants often woody at the base and planted in the border or wild garden; racemes.

- motorium. (gyrans) Telegraph Plant. Grown in gr. h; treat as A; 44 ftDESM-12. 20¢

DIANTHUS. (die-ANTH-us) PINKS, CARNATIONS. Caryophyllaceae.

A very large genus with many horticultural varieties. They are rather hardy and range in height from very low plants to 2-3 feet. They all do best in rather good garden soil, well drained and some even in raised beds. One thing in common in never to cover the tops with a winter mulch. Shearing the plants in the fall or early spring tends to keep them in shape. The annual sorts should be started early indoors and the perennials anytime up to August. We will list them by the species in the following list.

DIANTHUS BARBATUS: Sweet William. While they are perennials they are best grown as biennials; 1-2 ft. tall; make cutflowers late in the season.

- auricula-eyed, mixed. All with large white eye.....DIAN-17AX. 25¢
- Dunnettii. Blood-red fls; best in this type.....DIAN-17D. 15¢
- Harlequin. White, rose and red shades on same head; pretty.....DIAN-17H. 15¢
- Holborn Glory. Very large fls; white eye and white margins.....DIAN-17B. 15¢
- Hunt's Perfection. Auricula-eyed flowers; fine.....DIAN-17P. 15¢
- Johnson's Diadem. Brilliant dark scarlet with large white eye.....DIAN-17J. 15¢
- Newport Pink. Beautiful single salmon-rose.....DIAN-17N. 15¢
- Pink Beauty. Charming strain in shades of salmon-pink.....DIAN-17R. 15¢
- Purple Beauty. Deep purple, single flowers.....DIAN-17L. 15¢
- Scarlet Beauty. Brilliant scarlet variety.....DIAN-17S. 15¢
- Single Dark Crimson.....DIAN-17C. 15¢
- White Beauty. Pure white.....DIAN-17W. 15¢
- Single Annual Mixed. Fls first season; start early.....DIAN-17A. 20¢
- Dwarf Double Mixed. A one foot tall strain.....DIAN-17WX. 15¢
- Double Mixed.....DIAN-17DX. 15¢
- Sweet William Blend. All varieties and types.....DIAN-17X. 15¢

D. caryophyllus: The various types of Carnations come under this species. Most of are not real hardy in the far North but can be grown never the less in many gardens with some protection. Space plants 1 ft. apart and get them well started before winter.

- Giant Perpetual. Clove Pink. Largest; in all colors.....DIAN-12P. 25¢

CHABAUD'S CARNATIONS: Everblooming Carnations...Sow seed in Jan.-Feb. One of the best hardy outdoor Carnations.

- Cardinal Red. Beautiful shade.....DIAN-12C. 25¢
- Deep Rose.....DIAN-12Z. 25¢
- Double Rose. Extra choice double rose Carnation.....DIAN-12GZ. 20¢
- Jeanne Dionis. Pretty pure double white.....DIAN-12J. 25¢
- Enfant de Nice, Mixed. Beautiful strain, 75% true; 90% double.....DIAN-12E. 25¢
- Etincelant. Bright scarlet; 90% double.....DIAN-12T. 25¢
- Giants of Nice. Robust giants, 90% double.....DIAN-12G. 25¢
- Legion of Honor. Salmon rose.....DIAN-12L. 25¢
- Marie Chabaud. Pure yellow.....DIAN-12Y. 25¢
- Nero. Blood-red flowers.....DIAN-12N. 25¢
- Rose Queen. One of the best rose colors.....DIAN-12Q. 25¢
- Ruby. Dark red.....DIAN-12R. 25¢
- Simons Triumph. A beautiful double hardy Carnation in all colors; this is a very superior strain.....DIAN-12SM. 15¢
- Striped. Flowers striped red.....DIAN-12S. 25¢
- Teicher's Strain. High class Carnation strain.....DIAN-12T. 25¢

DIANTHUS: Continued on Page 188.

Improving the Multiflora Rose

Since mentioning this Rose species in a recent issue, as an ideal hedge to turn back live stock, there has been many letters on the matter but a remark by Mrs. Ann Hanley, of Canada, suggests a point worth considering. She says, "When someone develops another color, I'll be interested."

The flower on this rose is not attractive and is a sort of a washed-out pink but its ability to turn back pigs, even, suggests it as a valuable hedge plant on farms and around wood lots, etc.

However, after considering Mrs. Hanley's suggestion, wouldn't it be a sight to see a hedge of this rose along the highway with brilliant red flowers or even pink or golden yellow? The thorny part should be kept for its value would be as a tight hedge plant. Here is a grand opening for some one wanting to put his name on a popular flower.

SOAKING SEEDS

A great many seeds are benefited by soaking prior to planting. Legumes, especially the large seeded sorts, respond very well to this treatment.

Use at least five times their volume, of water which has been brot to a boil, then immerse the seeds and let stand for some 12 hours till the water has cooled.

Seed that is likely to stick together should not be given this soaking treatment.

If too much water is used, the length of time for it to cool, will be longer and thus some seeds may be damaged instead of helped, therefore it is better to under time the cooling period but 10-12 hours will be sufficient in most cases.

Where soaking is required for longer periods than 24 hours, it will be better to change the water twice daily or use running water to prevent souring.

TRAILING ARBUTUS SEED

Trailing Arbutus seed is rarely found and few botanists have even seen the fruits which are white and fleshy with small dark reddish seed on the surface. They are doubtless more frequently formed than seen and are soon carried off for food by ants. They need an acid soil and fall planting unless artificially chilled. (The Wild Flower Preservation Society Circular.)

BOOK LIST

BOOK LIST Continued from Page 186.

A.B.C. of ROCK GARDEN and POOL \$1.50
Shewell-Cooper. 204 pp. illus. London 1949. Quite comprehensive for its size, this book lists many plants usable for rock gardens and for pools. Gives cultural hints and tells you how to construct rock gardens and pools.

WINTER FLOWERING PLANTS FOR OUT DOOR BORDERS. \$1.75

Cultural details of trees and shrubs, bulbs that flower outdoors in the British Isles during the winter months. 123 pp. 20 pp. plates, 4 in color, London, 1947. This book should be of special interest to those in the Southern States.

A B. C. of the GREENHOUSE \$1.50
Shewell-Cooper, 320 pp., 4 col. plates 9 gravure plates, 27 line illus. 12mo, cloth. London, 1949.

PIONEER SEED COMPANY

Dimondale, Michigan, U.S.A.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Petunias Our Most Popular Flower

Continued from Page 177

Large Plain Edged Type

Similar to the above but with plain edged flowers and especially popular with the florist trade. The flowers all have a velvety-like appearance, giving them a rich effect in pots. Some 10 excellent varieties are in this group.

Under the Giants are listed mainly those known as the Giants of California. There are two strains of these, one 15-18 inches high, with the largest flowers in Petunias, heavily ruffled with wide shallow throats and rich markings.

The others are more dwarf in growth and bred especially for pot culture.

Both of these two classes are usually sold in several blends, some made in light colors and others in dark. A very small percentage will produce small flowers.

There is a difference in all lots of seeds, even when listed under the name of the same variety. A uniform growth as well as a uniform flower with a clear pure color, is the ideal but to meet the demand for a 10¢ packet many seedsmen have to offer seed that costs less to grow than what a pure strain can be produced for. The fault is mostly with the buyer for he can purchase a better seed if he so wishes.

Outside of Fire Chief, there has not been many actually new varieties of Petunias introduced by the Petunia breeders. Much that has been done has been in making the existing varieties more uniform and of a pure color that holds up under outdoor conditions without fading. Of course many of the best varieties are renamed in seed catalogs each year but outside of better strains each year, there has been few really new varieties.

LATE IN GETTING PRINTED

We do not like to take up space in discussing our own troubles, for who in business today is not having headaches?

Our main trouble is in getting the printing done; the higher the price paid, the less effort is made to do the work. We have to pay at the rate of \$3.75 per hour to operate the linotype, a job that does not require as much training as a good stenographer needs, in fact all the type in this issue has been set by an operator who never had any instruction in the operation of a linotype.

At the present our printing does not require a full force. It is impossible to secure a printer who can do the entire work for one must set only the type; another can only bunch it together and lock it up in the chase; then there must be someone to run the press and he knows nothing about the folder to say nothing about the stitcher and to add to all this, if any thing goes wrong with a machine, the operator is not supposed to even know how to make the repairs other than how to push a button to summon the repairman, this is especially so with the linotype, and repairmen in the printing trade usually get 6.00 per hour and expenses, with charges as much as \$25.00 per day for certain press repairs.

We thought that as we were so far behind on the November issue it would be best to skip it and at least we would be on time on the December issue but due to pressman delays during the past month we are as far behind as we were in November.

Of course, subscriptions will run for their required number of issues and we trust our readers will understand.

LARGEST DIANTHUS LISTING

DIANTHUS: Continued from Page 187.

—Tige de Fer, Mixed. Iron stem Carnations.....DIAN-12F. 25¢
—Carnation Blend. Many types and strains.....DIAN-12X. 25¢

—chinensis. Rainbow P. Grow as annual; single fls; HA.....DIAN-13. 15¢
—Imperator. Double strain giant flowers, HA.....DIAN-13P. 20¢
—nobilis. Very pretty form.....DIAN-13N. 20¢
—Heddwigii. Hardy annual Pinks, mixed.....DIAN-13HX. 15¢
—Dwarf Single Mixed.....DIAN-13DX. 15¢
—Mourning Cloak. Dark purple with lacinated edges.....DIAN-13HM. 15¢
—Salmon Shades.....DIAN-13SS. 15¢
—Fireball. Double deep scarlet.....DIAN-13HF. 15¢
—Lacinated, Mixed.....DIAN-13HL. 15¢
—Snowball. White lacinated flowers.....DIAN-13HS. 15¢
—Westwood Beauty. Pretty scarlet variety.....DIAN-13WB. 20¢
—Finest Double Mixed.....DIAN-13DX. 20¢
—splendens. Large flowered strain.....DIAN-13S. 15¢

GRENADIN CARNATIONS: Hardy border Carnations growing 15" tall. Excellent for the general garden growing where the Carnation type is wanted.

—King of the Blacks. Dark velvety brown.....DIAN-12GK. 15¢
—Rosy Morn. Pretty rose colored variety.....DIAN-12GR. 15¢
—Scarlet Morn. Best red variety.....DIAN-12GS. 15¢
—Tausendschon. Delicate rose to salmon-rose; excellent.....DIAN-12GT. 15¢
—White Queen. Pure white.....DIAN-12GW. 15¢
—Yellow Queen. Best yellow variety.....DIAN-12GY. 15¢
—Grenadin Carnation Blend.....DIAN-12GX. 15¢
—Giant Malmaison. Largest, fragrant, most satisfactory for garden.....DIAN-12GM. 30¢

MARGARET CARNATIONS: Considered the most satisfactory Carnation for the average garden. It is early and, except where the winters are severe, it will live 3-4 years. If started real early in the spring, flowers can be had the first year.

—Red Marge. Best red variety.....DIAN-12MR. 15¢
—Yellow Marge.....Best pure yellow variety.....DIAN-12MY. 15¢
—Rosy Marge. Rosy pink variety.....DIAN-12MZ. 15¢
—White Marge. Best pure white variety.....DIAN-12MW. 15¢
—Margaret Carnation Blend.....DIAN-12MX. 15¢
—Raviera Market. Showy blend of large double flowers.....DIAN-12MV. 25¢

HARDY DWARF CARNATIONS: These are biennial but best treated as annuals, and if started fairly early will give an excellent show by summer. They are early, fine bloomers, double and in bright colors, 15" high. Excellent for bedding.

—Dwarf Vienna, White. Pure white variety.....DIAN-12VW. 20¢
—Rose. Best pure rose colored variety.....DIAN-12VZ. 20¢
—Mixed.....DIAN-VX. 20¢

HYBRID PINKS: All the crosses in Dianthus are listed here. They all are very nice and should be in every border planting.

—Heddwigii Hybrids. Double fls, mixed colors.....DIAN-68H. 20¢
—Sweet Wivelsfield. Distinct race; various shades; very good; 12"; HP.....DIAN-68W. 15¢
—La Bourbrille. Very dwarf silver mats; pink fls; 12"; HP.....DIAN-68B. 25¢
—Sshonheit. Cross heddwigii x chinensis; very pretty bloom-red.....DIAN-68S. 20¢

PLUMARIUS: Grass or Clove Pinks. This is one of the best species for the border. They grow about 12" tall and in both double and single flowers; the singles make a beautiful display in the front of the border. They come in white and all shades of pink and red, with contrasting eye. They are all real hardy; all perennials; germinate in 5 days.

—cyclops. Dark rose shades with carmine ring; extra choice.....DIAN-99SC. 20¢
—nanus fl. pl. mixed. Best dwarf strain in double flowers.....DIAN-99NX. 20¢
—Dwarf Harlequin. Single perpetual Pinks; very pretty; mixed.....DIAN-99DH. 20¢
—Lumnitzeri. A form of D. plumarius.....DIAN-99L. 25¢
—Mayflower. Early dwarf double, nice blend of colors.....DIAN-99M. 20¢
—Mrs. Sinkins. Pure double white.....DIAN-99K. 30¢
—Pheasant's Eye Mixed. A French strain of single pinks; mixed.....DIAN-99P. 20¢
—Perpetual Dwarf Harlequin. White, rose and red fls on same stem.....DIAN-99H. 20¢
—Rose of May. Large double rose; 6"; HP.....DIAN-99Z. 20¢
—semperflorens. A Hortulan Pink.....DIAN-99S. 20¢
—Dwarf Double Mixed. Low growing D. plumarius.....DIAN-99WX. 15¢
—Double Mixed.....DIAN-99DX. 25¢
—Single Mixed.....DIAN-99SX. 20¢
—Scoticus Mixed. Special florist strain, many colors with bright eye.....DIAN-99S. 25¢
—Florist Strain. Perpetual Pinks; extra strain for cutting Oz. 55¢.....DIAN-99SF. 25¢
—D. Plumarius Blend. All kinds mixed.....DIAN-99X. 20¢

DIANTHUS SPECIES: The largest list of Dianthus published anywhere!

—Allwoodii. Hybrid in good color range, similar to D. plumarius; HP.....DIAN-2. 25¢
—alpinus. Fls deep rose-crimson with eye, 1½" ac; 4"; HP.....DIAN-5(F). 50¢
—alpinus. Fls 1½" ac; on stems 2-4 in. high; various colors with eye; HP.....DIAN-5. 20¢
—albus. A very nice white form.....DIAN-5A. 25¢
—arenarius. Fringed fls, frag., white, cream, pink; 6"; HP.....DIAN-9. 20¢
—arvensis. (Rou). Small caespitose plant, 4" tall; pink; hybrid.....DIAN-9(F). 50¢
—brachyanthus. 9" tufted; fls small rose; RG; HP.....DIAN-22(F). 50¢
—caesioides. see D. gratianopolitanus.
—carthusianorum. Clusterheads like Sw. Wm. many colors; 20"; HB.....DIAN-11(F). 30¢
—giganteus (Urv).....DIAN-11G(F). 50¢
—pumilus. (Shur).....DIAN-11P(F). 50¢
—saxigenus. (L).....DIAN-11S(F). 50¢
—silvesterv. v. subcaulis. (Koch).....DIAN-11L(F). 50¢
—lenuifolius. (Schur).....DIAN-11T(F). 50¢
—vaginatus. (Hegi).....DIAN-11V(F). 50¢
—carthusianorum v. iustis. Clusterhead; collected in Bosnia.....DIAN-11T. 30¢
—cruentus. (Greiseb) Blood-red terminal fls on 18" stems; HP.....DIAN-43(F). 50¢
—creuntus. Blood-red fls; 18 in; HP.....DIAN-43. 25¢
—deltoides. Maiden Pink. Small rosy purple fls; turf type; 6"; HP.....DIAN-45. 15¢
—Bowie's Variety. Bronze foliage, vivid carmine fls; HP.....DIAN-45B. 20¢
—Bowie's Variety. Dark fol in prostrate mats; crimson fls; HP.....DIAN-45B(W). 30¢
—Stern's Variety.....DIAN-45S. 25¢
—Brilliant. A brilliant rich rose-pink; 6"; HP.....DIAN-45L. 15¢
—erecta. Crimson fls on short erect stems, extra good for RG.....DIAN-45E. 20¢
—Freynii. Alpine; solitary bright pink; Herzegovina; HP.....DIAN-51(C). 30¢
—furcalus. (Bla) Fls solitary, rose, ½" ac; Alps; pretty; 9"; HP.....DIAN-53(F). 50¢
—furcalus. Pretty plant, solitary rose fls; Italian Alps; 9 in; HP.....DIAN-53(C). 50¢

DIANTHUS: Continued on Page 189.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

DICENTRA - DIGITALIS

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

DIANTHUS: Continued from Page 188.

- fragrans. Fragrant rose-white and spotted fls; Caucasus; 18 in; HP.... DIAN-50(C). 30¢
- giganteus: see *D. carthusianorum*.
- graniticus. True; fls 1 in. ac; purple; Pyrenees; 6 in; HP..... DIAN-58. 30¢
- gratianopolitanus. Cheddar Pink; mat-forming; 8 in; showy rose; HP.... DIAN-59. 30¢
- Hoppe. DIAN-66. 50¢
- hyssopifolius. (monspessulanus) Deeply fringed, frag; mixed col; 1'; HP.... DIAN-67. 15¢
- Kilaubellii. DIAN-70. 30¢
- Knappii. Lemon yellow; the only yellow Dianthus..... DIAN-71. 20¢
- latifolius atrococcineus. Erect, double, glowing crimson; 12"; HB..... DIAN-73A. 15¢
- Liboschitzianus. White fls; Caucasus; 12"; HP..... DIAN-76. 25¢
- monspessulanus: name changed to *D. hyssopifolius* which see.
- nardiformis. Cespitose; rose fls; 6"; HP..... DIAN-87. 25¢
- nardiformis. RG; 6" high; fls rose in fascicles; HP..... DIAN-87(F). 50¢
- neglectus. Glacier Pink. Small crimson-pink with lighter eye..... DIAN-89. 25¢
- Noeanus. Densely tufted; white small frag. fls; 10 in; HP..... DIAN-91(C). 50¢
- praecox..... (Kit) DIAN-100(F). 50¢
- prolifer. Little carmine-pink fls, small heads; HA; 1 ft; RG..... DIAN-101. 25¢
- Rosi. Variable; showy small Pink with lge deep rose fls; HP..... DIAN-108(F). 50¢
- Rosi. Showy tufted small pink with large deep rose fls; HP..... DIAN-108(C). 50¢
- Seguieri. Variable type of *D. chinensis*..... DIAN-111(C). 40¢
- strictus v. *integer*..... Small white fls; 10 in; HP..... DIAN-119T. 25¢
- superbus. Red fls excellent cut; 24 in; HP..... DIAN-125. 25¢
- subcaulis. (Vill) DIAN-120(F). 50¢
- Sundermannii. (Born) More showy than *D. strictus*; Greece; HP..... DIAN-121(F). 50¢
- tenuifolius: see *D. carthusianorum*.
- iris. (Vel) Clusterhead; purple; 16"; Bulgaria; HP..... DIAN-132(F). 50¢
- subneglectus: see *D. carthusianorum* v. *pumilus*.

- Dianthus Blend. Made up of over 100 different kinds of Pinks..... DIAN-X. 15¢
- Dianthus Species Mixed. A mixture of the rarer species..... DIAN-XS. 25¢
- Rare Rock Garden Species. Many species mixed; for the rockery..... DIAN-RX. 25¢
- Ingwersen's Mixed Pinks. Seed saved from their collection of lovely garden Pinks; this English collection contains many new types and varieties..... DIAN-XW. 30¢

DICENTRA. (dye-SENT-ruh) BLEEDING HEART. Fumariaceae.

- Perennials with rose, yellow or white flowers in racemes, thriving in a rich light loam.
- chrysanthia. Golden Eardrops. Sulphur-yellow fls; 5 ft; Calif; HP..... DICN-3. 25¢
- oregana. Cream and rose fls; nodding panicles; 1 ft; HP..... DICN-10. 25¢
- oregana. (glauca) Gray foliage and creamy pink locklets; 8"; HP..... DICN-10(B). 50¢
- spectabilis. Bleeding Heart. Rosy red fls; Japan; 2 ft; HP..... DICN-13. 25¢
- Dicentra Blend. All kinds mixed..... DICN-X. 20¢

DICRANOSTIGMA. (die-kray-no-STIG-ma) Papaveraceae.

- Plants from central Asia, orange or yellow flowers. Best in light soil.
- Franchetianum. Bright yellow fls; 1 ft; HB..... DICR-1. 20¢

DICTAMNUS. (dik-TAM-nus) Fraxinella, Gas Plant, Burning Bush. Rutaceae.

A garden favorite that makes large clumps with good sized and showy flowers with a strong lemon scent. They dislike transplanting and enjoy a rich soil. Seeds germinate very slowly.

- albus. The white flowered species HP..... DICT-1. 25¢
- v. *purpureus*. A dark flowered variety..... DICT-1P. 25¢
- rubra. Rosy purple fls; 3 ft; HP..... DICT-1R. 25¢

DIDISCUS: See *Trachymene*.

DIERAMA. (dye-er-RAY-muh) Iridaceae.

South African cormous plants hardly only in Fla. or S. Cal. Culture same as *Ixia* or they can be grown under glass in the North.

- pendula. Lvs. basal; fls white to mauve in drooping spikes; TBb..... DIER-2. 30¢
- pulcherrima. Bright purple fls; drooping spikes; 4 ft; TBb..... DIER-3. 30¢
- Hybrids. Mixed colors..... DIER-1. 25¢
- Dierama Blend. All species mixed..... DIER-X. 25¢

DIGITALIS. (dij-ah-TAL-is) FOXGLOVE. Scrophulariaceae.

Erect biennials and perennials, favorites in the garden. Their stately spikes, 3 ft. high are crowded with thimble-like flowers, beautifully spotted. Easily grown from seed sown in the spring or summer for flowers the next season.

D. PURPUREA. The common Foxglove. It is a biennial and there are many improved forms and varieties being introduced in this species.

- gloxinaeflora. Pink spotted fls, more open than other forms..... DIG-1. 15¢
- The Shirley. Giant hybrids in good colors, extra choice; 5 ft..... DIG-1S. 15¢
- White. Pure white flowers..... DIG-1W. 15¢
- Pink. Deep rose flowers..... DIG-1X. 15¢
- Blend. Blend of above varieties..... DIG-1Z. 10¢

Other Digitalis Species:

- grandiflora. Yellow fls; 3 ft; HP..... DIG-7. 20¢
- dubia. Pink flowered, silver lvs Foxglove; Greece; 12"; HP..... DIG-3(B). 50¢
- lutea. Yellow flowers; 2 ft; HP..... DIG-11. 25¢
- orientalis. Fls cream striped red on lower lip; not hardy in N; 3'; TP..... DIG-18. 25¢
- Digitalis Blend. All species mixed..... DIG-X. 15¢

DODECATHEON. (doh-dek-KAYTH-ee-on) Shooting Star. Pimulaceae.

Small American perennials with nodding Cyclamen-like flowers in umbels on spikes; best in well drained position with some shade.

- Clevelandii. Purple fls yellow base, anthers yellow; S. Cal; 5"; HHP..... DODE-4. 25¢
- Cusickii. Deep rose to lavender fls; 1 ft; HP..... DODE-7. 25¢
- Hendersonii. Similar to *D. Clevelandii* but purple anthers; 5 in; HP..... DODE-11. 25¢
- Meadia. Reddish yellow, purple anthers; 6"; HP..... DODE-17(F). 50¢
- pauciflorum. (Greene): see *D. vulgare*.
- radicatum. Rose or reddish fls, purple anthers; 5 in; HP..... DODE-25. 25¢
- vulgare. Purple with dark tints in throat; 18"; HP..... DODE-33(F). 50¢
- Dodecatheon Blend. All species mixed..... DODE-X. 25¢

Bb means bulb; Tr, tree; Sh, shrub; T, frost tender; W white; lvs, leaves Cl, climber.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

A Reader's Point of View on Articles

We receive many letters during the course of a week, some of which I fear do not get answered, mainly because of lack of time. We actually like to get letters from our readers especially when they contain suggestions for future issues but the following letter we just received from Eugene Thayer, who owns and operates the Prosperity Farm Perennial Gardens at Fairfax, Va.

After some remarks about his subscription, which he renews, he says, "I like it but you could do a lot to make it better. Many of them very simple things. For example, when you have an article on some flower, put the price per packet at the end of the article. For let's face it, your magazine's purpose is to sell seed and plants and the easier they are to buy the more you will sell.

As an example, you had a list of desirable flowers from English gardens, but no prices, and one must look thru three books to find them. I simply won't do it!"

Answer: There is a lot to what Mr. Thayer states here. The particular article mentioned would have been better if it did state a price but we hesitate to add on to each item a price but on the other hand our most important intention is not to discuss flowers and plants that no one knows where to get them. It seems to be the pride and joy of certain gardeners to always want to talk about something they have but no one else has and then to sort of 'throw around' a few seeds as one would scatter a few coins to the poor. It has always been the writers experience, that free seeds produce but few flowers; one just naturally will have more interest in a plant that he gets himself. We are listing some more of these same English seeds which are from the Ingwersen collection and are adding the symbol number and the price and we will do this in the future. We might also make some remarks about these symbol numbers, which seem to bother a few readers. The main reason for them is the ease in which they can be located by the help; with some 8,000 lots of seed, how would you ever fill an order with the present rapid change of help, besides it is very difficult to fill an order when it is written out in full for so many times something is left out making it impossible to tell just what is wanted.

To go on with the letter, "And another thing, don't list a whole lot of items that cannot be secured. That makes me mad; I want to buy it but you don't sell it! An example is those dwarf Penstemons. But most aggravating of all is Victoria Padillo's articles on Bromeliads. Why don't you get in touch with some one who raises Aechmeas and Billbergias and get them to advertise in the classified section.

REMARKS: We, ourselves, never list anything we do not have to offer; where such unavailable items are mentioned it is always by some one who is writing an article. It has been difficult to draw a line so close but it is foolish to give a lot of space to something that "I have but you do not".

We have had hopes that the Bromeliad Column would develop into an interesting column and it still may but it is difficult to have others offer their wares unless they wish but it is one of the main objects of the magazine to make it a source for all kinds of flower seeds and plants.

"One thing I like about your magazine, you tell when fresh seed is to be expected.

Continued on Page 191

Overcoming Dormancy in Tree and Shrub Seed

Many seeds, especially of trees and shrubs, fail to germinate even when one would consider every condition favorable. This condition is known as being dormant and is caused by either a hard seed coat preventing moisture and oxygen from reaching the embryo or some condition of the embryo itself which prevents its germination until more favorable conditions appear.

Either one may be the cause or again both may be the cause. In nature such seeds may remain for 2 or more years before germinating for what is two years in nature's work shop? But with man, this is a vexing problem, especially in the nursery or garden, never the less, it is an important factor in the survival of a species.

There are several methods that can be employed to overcome dormancy but while one or more of these may prove successful, there are cases where it is impossible to overcome the dormancy and only time will accomplish it.

There is not a great deal of recorded information on the subject and one really should know what is and what is not the proper treatment for each species but to give a general idea of the treatments, it can be stated that one should first consider the seed coat.

If there is an impermeable seed coat, by soaking in warm water or cutting, germination can be started, this would be the first step. Such seed as the Ipomoeas, Sweet Peas, Cannas, etc., usually come in this group.

A very common method of pretreating impervious seed coats is to soak the seed in concentrated sulfuric acid. It is very effective with many species, even increasing the germination percentage in some cases.

To treat seed with the acid, of course use wood or earthen-ware containers, never metal. Merely cover the seed with the acid and allow to stand from 15-60 minutes. By carefully stirring the mixture the necessary time required can be reduced. A temperature of 60-80 degrees F. is best.

The correct time for this treatment varies as to the kind of seed as well as the condition of the particular batch of seed. In large lots of seeds, small trials can be made first with varying time limits and then soaking the seed in water from 1-15 days, depending upon the species and then observe the number of swelled seeds. Insufficient treatment leaves the seed coat on some species glossy; too long a treatment pits them; correct time leaves the seed dull but not deeply pitted.

After treating, wash the seed with cool water for 5-15 minutes. Then carefully dry them when they can be held a month or more before sowing or they can be immediately planted without drying.

Of course great care should be used in handling the acid. One important caution: do not splash or pour water INTO the acid. After treating, pour off excess of acid first and then wash.

Another method is scarification. The seed coat is scratched or filed to make an opening thru the hard seed coat. There are mechanical scarifiers using sand paper or in other cases sand or gravel.

The January issue will contain lists of Roses, Dahlias and Gladiolus. There also will be complete listing of Lawn Seeds and additional Spring Bulbs.

DORONICUM - DRABA - DRYAS

DISPORUM. (dis-POH-rum) FAIRY BELLS. Liliaceae.

Perennial plants found in woods and grown in the wild garden. Flowers are solitary or in umbels followed by a berried fruit.

—oreganum. Creamy white fls; 2 ft; HP..... DISP-6. 20¢

DOLICHOS. (DOL-ik-oos) Leguminosae.

Rapid annual climbers, 10 ft. or more, with Wisteria-like flowers in red or white, followed by attractive pods; dislikes transplanting. All tender annuals. Sow in spring.

—Lablab. Hyacinth Bean. Fls purple or white, rapid climber..... DOLC-4. 15¢

—Soudan. Dark leaves, purple flowers..... DOLC-48. 20¢

—Tall Mixed. Purple and white flowers mixed..... DOLC-4X. 15¢

DORONICUM.....(doh-RON-ik-um) LEOPARD'S BAND. Compositae.

Herbaceous perennials, daisy-like flowers in yellow; blooms early in spring. Prefers sun and rich soil. Easily grown.

—caucasicum. Grows to 2 ft., nice in the border, HP..... DORO-2. 20¢

—magnificum. A more robust type with larger heads; 3 ft; HP..... DORO-2M. 25¢

—cordifolium. (Columnae) (Ten) Solitary heads; 5"; HP..... DORO-5(F). 50¢

—grandiflorum. (Lam)..... DORO-6(F). 50¢

—hirsutum v. glacile. (L)..... DORO-7(F). 50¢

—Blend. All species mixed..... DORO-X. 25¢

DOUGLASIA. (dug-LASS-ee-uh) Primulaceae.

—laevigata. Bright red fls; collected 5,000 ft Mt Olympic Mts; HP..... DOUG-3. 30¢

—montana. Purple or lilac fls; Mont; HP..... DOUG-5. 20¢

—sp. nova. Collected at 10,000 ft Bitter Root Mts; Ida; HP..... DOUG-8. 30¢

DOWNINGIA. (down-INJ-ee-ah) Lobeliaceae.

Small plants native to the western Americas. They are nice in the border.

—immaculata. 2-4 in. annual; rich soil; sunny position; HHA..... DOWN-2. 25¢

DRABA. (DRAY-buh) Cruciferae.

Annual, biennial nad perennial plants; flowers are small and dainty, in white, rose, yellow or purple in terminal racemes. They are very hardy and popular in rockery.

—aizoides. Tufted, basal rosettes; yellowish fls; 4 in; HP..... DRAB-1. 30¢

—aizoides. Yellowish fls in racemes; tufted; 4 in; HP..... DRAB-1(C). 30¢

—alpina. (L) Fls yellow in clusters; lvs basal; 6"; HP..... DRAB-4(F). 50¢

—glacialis (Fies) Lvs oblong-lanceolate; Siberia; HP..... DRAB-4G(F). 50¢

—pilosa. (Sch)..... DRAB-4P(F). 50¢

—athoa. (Boiss) Yellow fls in racemes; 5"; HP..... DRAB-10(F). 50¢

—austriaca. (Jacq. stellata) Milk white; 12"; HP..... DRAB-12(F). 50¢

—borealis. (D. C.) White dense corymbose racemes; Arctic; 12"; HP..... DRAB-14(F). 50¢

—brunifolia. Tufted, 4"; fls pretty orange, racemes; mts Medit; HP..... DRAB-16(F). 50¢

—cinerea. (Adams)..... DRAB-21(F). 50¢

—diversifolia. (Boiss) Form of D. brunifolia; Armeria; HP..... DRAB-25(F). 50¢

—dorreri. (Heuff)..... DRAB-26(F). 50¢

—elongata v. balcanica. (Sch)..... DRAB-28(F). 50¢

—giabella. (Pursch)..... DRAB-30(F). 50¢

—lactea. White fls; Arctic; HP..... DRAB-40(F). 50¢

—longirostra. Like D. aizoides but smaller; yellow; HP..... DRAB-46(F). 50¢

—magellanica. (Lam)..... DRAB-47(F). 50¢

—nivalis. (Lil) White, dense racemes, sub-arctic; 3"; HP..... DRAB-48(F). 50¢

—norvegica. (Gunn) (D. laxa) White; 8"; sub-arctic; HP..... DRAB-49(F). 50¢

—olympica. (Sibth) Large orange fls, compact racemes; Medit; 4"; HP..... DRAB-51(F). 50¢

—olympica. Cushion-like; orange fls in compact racemes; HP..... DRAB-51. 30¢

—Pacheri. Stur)..... DRAB-53(F). 50¢

—polytricha. Yellow fls; dense rosetts; Caucasus; 2 in; HP..... DRAB-52. 30¢

—pyrenaica: see Petrocallis pyrenica.

—sauteri. (Hoppe)..... DRAB-64(F). 50¢

—siberica. (M. B.)..... DRAB-67(F). 50¢

—Draba Blend. All species mixed; this is a RARE blend..... DRAB-X. 40¢

DRACAENA indivisa: The greenhouse Dracaena — see Cordyline indivisa.

DRACOCEPHALUM. (dray-koh-SEF-ah-lum) DRAGONHEAD. Labiatae.

Hardy annual and perennial plants with blue, purple or white flowers in whorls. They make pretty groups in most shady spots in the border, where the flowers last longer than when in sun. Easily grown from seed.

—altaieuse. (Laxm)..... DRPH-1(F). 50¢

—austriacum. (L) Blue fls 1½" long; Caucasus; 18"; HP..... DRPH-2(F). 50¢

—botryoides. (Stev) Six inches high; Caucasus; HP..... DRPH-4(F). 50¢

—Mairei. (Emb)..... DRPH-13(F). 50¢

—Moldavica. Charming border plants, 1 ft; HA..... DRPH-14. 15¢

—tanguticum. Fls blue, 1" long; Mongolia; 2 ft; HP..... DRPH-26(F). 50¢

—Wilsonii. (Dunn) Dark blue, clusters; China; 2½ ft; HP..... DRPH-30(F). 50¢

—Dracocephalum Blend. All species mixed..... DRPH-X. 30¢

DRACUNCULUS. (dray-KUNK-yew-lus) Araceae.

Tuberous plants native of the Meditterian regions. Grown in the Soutr or in greenhouses in the North.

—vulgaris. Hardy to Long Island in sheltered position..... DRAC-4. 20¢

DRYAS. (DRY-as) Rosaceae.

Mountain Avans. Dwarf evergreen prostrate plants for rock garden. A very hardy perennial for well drained porous soils.

—Drummondii. (Rich) Yellowish fls; nodding; 18"; HP..... DRYA-1(F). 50¢

—integrifolia. (Vahl) White fls, ¾" ac; HP..... DRYA-2(F). 50¢

—octopetala. White; 1-1½ in. ac; erect; HP..... DRYA-5(C). 30¢

—minor. A very dwarf form..... DRYA-5M(F). 50¢

—Suendermannii. (hort) Hybrid; yellowish to white; nodding; HP..... DRYA-8(F). 50¢

—fenella..... DRYA-9(F). 50¢

—Dryas Blend. All species mixed..... DRYA-X. 30¢

DUCHENSEA. (dew-KEES-nee-ah) INDIAN or MOCK STRAWBERRY. Rosaceae.

Perennial plants from Asia with trailing branches; flowers yellow followed by fruits; used as a ground cover or in hanging baskets

—indica. Very decorative; fruits look like strawberries..... DUCH-1. 25¢

ON PURCHASES OF LESS THAN 50¢ WE WILL ACCEPT 3¢ STAMPS

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

ECHINACEA - ENKIANTHUS

DYCKIA. (DIK-ee-uh) Bromeliaceae.

Stemless succulents, in basal rosettes and yellow or orange flowers in racemes or panicles. Planted in Fla. or Calif.
—*sulphurea*. Yellow fls, ½" long; 1 ft high; Brazil; TP..... **DYCK-6. 25¢**

EBENOPSIS. (eb-en-OP-sis) Luginosae.

Sub-tropical trees and shrubs suitable for mild sections.
—*flexicaulis*. Texas Ebony; tree or sh; frag; yellow fls; S. Tex..... **EBEN-1. 25¢**

ECCREMOCARPUS. (e-krem-oh-KAHR-pus) GLORY FLOWER. Bignoniaceae.

Climbing shrubs from Chile; tubular yellow, orange or scarlet flowers in terminal racemes followed by fruits. Grow it as a tender annual in the North, but it is a perennial in the South.
—*scaber*. Orange-red fls; start early; warm situation; 12 ft..... **ECCR-1. 25¢**

ECHEVERIA. (ek-ev-VEER-ee-ah) Crassulaceae.

Succulent plants, leaves in rosettes and flowers in spikes, panicles or racemes. They are much like the *Sempervivums* and with same culture.
—*gorgis*..... **ESHV-42. 25¢**

ECHINACEA. (ek-i-NAY-she-ah) CONEFLOWER. Crassulaceae.

Native perennials closely related to *Rudbeckia*; bushy growth and daisy-like flower heads often 6" across. They are fine in the border and for cut flowers, blooming for 2 months. Thrive in rich sandy loams in dry places.
—*purpurea*. (Focke) Purple Cone F; purple, white rays; 5 ft; HP..... **ECHI-4(F). 30¢**

ECHINOPS. (EK-in-ops) GLOBE THISTLE. Compositae.

Thistle-like biennials and perennials with flowers in round heads. They are decorative in the border and easily grown from seeds.
—*exaltatus*. (Ritro) Steel blue fls; 2 ft; HP..... **ECHN-4. 15¢**

ECHIAM. (EK-ee-um) VIPER'S-BUGLOSS. Boraginaceae.

Annual, biennial and perennials thriving in rather poor soil and sunny positions. Flowers are in blue, purple, rose or white in coiled racemes. They are warm region plants and are grown in California. *E. vulgare* is a fine bee food in waste places.
—*plantagineum*. Fls blue and light purple; HA or HB; 3 ft..... **ECHM-7. 20¢**

—*pomponicum*..... **ECHM-8. 20¢**

—*vulgare*. Blue Weed. For bee food on poor soil HB (Lb. \$1.50)..... **ECHM-12. 15¢**

—*Blue Bedder*. New compact, bright blue fls; 1 ft; HB..... **ECHM-12B. 20¢**

EDRAINTHUS. (ed-er-AN-thus) Campanulaceae.

Low tufted perennials from the Balkin regions and related to *Wahlenbergia*. Good rock garden plant; 6-12" across. Easily grown from seed.
—*circinatus*..... **EDRA-4. 20¢**

—*dalmaticus*. Tufted, 6" high; Dalmatia..... **EDRA-6. 20¢**

—*graminifolius*. (D. C.) Tufted, 3"; bluish; Italy; HHP..... **EDRA-9(F). 50¢**

—*Kitaibelii*. (D. C.)..... **EDRA-10(F). 50¢**

—*parnassicus*. Tufted; bright blue fls in clusters; 3"; HP..... **EDRA-12. 25¢**

—*serpyllifolius*. Low tufted, 4"; fls bell-shaped; violet; showy; HHP..... **EDRA-17(F). 50¢**

—*tenuifolius*. (D. C.)..... **EDRA-19(F). 50¢**

—*Edraianthus Blend*. All species mixed..... **EDRA-X. 35¢**

EHRETIA. (er-RET-te-ah) Boraginaceae.

Tropical trees and shrubs suitable for the far South. They are interesting and or'n.
—*laevis*. Small semi-deciduous tr; India; small white fls; TTr..... **EHRE-3(M). 35¢**

EMILIA. (e-MIL-ee-ah) TASSEL-FLOWER. Compositae.

Annual and perennial plants of low neat habit; native of the tropics. The slender stems are tipped by small rayless many colored flower heads surrounded by white bristles. Grow as a tender annual in the North in sunny place, flowers July till frost. These were listed in the past under *Cacalia*.
—*coccinea*. Small red flowered variety..... **EMIL-1C. 15¢**

—*aurea*. Golden yellow flowers..... **EMIL-1Y. 15¢**

—*lutea*. Orange flowers..... **EMIL-1G. 15¢**

—*Mixed*. Red, yellow, golden orange; TA..... **EMIL-1X. 15¢**

—*Emilia or Cacalia Mixed*. All species and varieties..... **EMIL-X. 15¢**

ENKIANTHUS. (en-ke-AN-thus) Eriacaceae.

Hardy deciduous shrubs native of Asia. They are of attractive upright growth with long slender clusters of nodding flowers in the spring. Thrive in moist, light soils with peat or leaf mold; easily grown from seed; fairly hardy.
—*campanulatus*. Tall sh to 30 ft; yellow or orange fls; brilliant fall fol..... **ENKI-1. 25¢**

—*himalaicus*. Bright red shoots; red and yellow bells; brilliant fall fol..... **ENKI-6. 25¢**

EUONYMUS. (yu-ON-e-mus) SPINDLE TREE. Celastraceae.

Shrubs and small trees with attractive foliage and showy fruits in fall; easily grown and not particular as to soil. Best to sow seed as soon as ready, in the fall, so as to winter over and germinate in the spring. We can quote by the pound if interested.
—*atatus*. Purplish fruits; China; 8 ft; HSh..... **EUON-1. 25¢**

—*americanus*. Strawberry Bush. Decid. sh to 3 ft; fr. pink; hardy N. Y..... **EUON-2. 25¢**

—*atropurpureus*. Wahoo, Burning Bush. Decid. sh to 20 ft; sc. fr; hardy..... **EUON-3. 25¢**

—*europaeus*. Decid. sh to 20 ft; fr. pink; HSh..... **EUON-8. 25¢**

—*intermedia*. Bright red fruits..... **EUON-8T. 35¢**

—*japonicus*. Ev. sh; to 15 ft; pink fr; Japan; not hardy in N. HSh..... **EUON-15. 25¢**

—*sachalinensis*. (planipes) Fruits purple; allied to *E. latifolius*; HSh..... **EUON-30. 35¢**

—*Euonymus Blend*. All species and varieties mixed..... **EUON-X. 25¢**

ENTELEA. (n-tel-EE-ah) Tiliaceae.

One large leaved shrub to 20 ft; New Zealand; not hardy in the North.
—*arborescens*. Lvs 9" long; fls 1 inch across in cymes; HSh..... **ENTE-1. 25¢**

EPILOBIUM. (ep-il-LOH-bee-um) WILLOW HERB. Onagraceae.

Hardy plants suitable for damp places or in wild garden.
—*augustifolium*. Fire eed. Purple fls 1 in. ac; in terminal rac; 8 ft; HP..... **EPIL-4. 20¢**

—*crassum*. (Hook)..... **EPIL-7(F). 50¢**

—*rigidum*. Rare; RG; 1 in; vivid rose pink; pretty 4 in. mats; HP..... **EPIL-28. 50¢**

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Helianthus angustifolia

The original plants that I have in my garden were secured from the wild in the vicinity of Cincinnati, where they endure the winters. I have grown it for more than ten years and have not seen it in any garden, except where I have distributed either seed or plants.

The plant is among the last to bloom in the Fall and is a mass of small "Black-eyed--Susans" like flowers which keep fairly well when cut. Occasionally some of the flowers show doubling, this trait might be increased by breeding, altogether the plant seems worthy of more extensive use.

The plant blooms the first year from seed, making an attractive background, about 5-6 feet tall; it should be pinched early to induce branching. It self sows quite readily and transplants rather poorly, is easily destroyed when young, therefore can be easily controlled and is apparently free from insects and disease. **(HELA-1. 25¢)**

By Mortimer Herzberg, Wilmington, N. C.

SOME HALF HARDY VINES

All kinds of Ipomeas; Gourds; *Momordica Charantia*, *Trichorsanthes Anguina*, *Cyclanthera pedata*, *Cobaea scandens*, *Thunbergia alata*, *Mina lobata*, *Passiflora*, *Humulus japonica*, *Adlumia cirrhosa* and *Dolichos Lablab*.

A READER'S POINT OF VIEW

Continued from Page 189

That also is something else you should do, put in the article describing some, in the issue when fresh seed is available."

That is exactly what we try to do but 8,000 different kinds of seeds to keep track of does not allow such a complete description, all the time. In this particular booklet of 16 pages, is listed 14 double columns and of these 14 columns there has been at least 4 columns of new listings made or nearly 25%! This takes considerable time to get these correctly set up; it's quite a job. And that is why we welcome corrections by our readers.

Mr. Thayer goes one to the Lily prices which we have already mentioned before and then says, "But in general your magazine pleases me. I am 63 and have a small greenhouse to play with and my pet diversion in the winter is to write "wish lists". Many an order I have written and never sent. My hobby is Day Lilies and I have a number of very fine seedlings and may send you some next year.

Well, be assured, Mr. Thayer, we are doing all we can to make the magazine of the most interest and when you get ONE copy in which you cannot find some improvement over the last one, you can say, "They are resting", then poke us up!!

While on this subject let us make a few remarks about the editorial policy.

We welcome short items of, say, 100-200 words on a flower and especially on its culture and uses. You no doubt have enjoyed such articles written by others so why not let some one enjoy your experiences too. Every one has some good experience in the growing of flowers. Usually there is a certain group of "gardeners" who sit down and grind out columns of stuff so long as they can get paid for it but these articles usually are not suitable for our columns, we want them more practical and based upon actual dirt experience.

This is the only Magazine published that furnishes you a source for rare seeds.

PANSY Swiss Giant Blend	65.00
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PIONEER SEED COMPANY
 Dimondale, Michigan, U. S. A.

GET EVERY ISSUE — \$2.00 PER YEAR

The charge will be 20¢ per line of seven words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

MAKE USE OF THE CLASSIFIED SECTION - IT'S YOURS

GLADIOLUS BULBS. List your surplus bulbs in the classified; it will pay you.

RARE SHRUB AND TREE OFFER

Continued from Front Cover Page

—**racemiflora microcarpa.** Ea. \$1.00; 3-\$2.50
An 8 foot species with pretty arching branches, flowering in May, in white clusters; berries are red. (1½-2 feet).

—**salicifolia.** Each \$1.25; 3 for \$3.00
An invaluable evergreen, tall and graceful, carrying a heavy crop of red berries. Zone VI. (2-2½ feet).

CYATHODES

All oranemntei shrubs from Australia. They are only suitable for Zone VII, the far South.

—**Colensoi.** Each \$1.50; 3 for \$3.75
A Heath-like New Zealand shrub of decumbent habit, with hoary foliage. Fruits are white or red. Zone VII.

—**robusta.** Each \$1.50; 3 for \$3.75
A more erect growth and longer leaves. Zone VII.

DEUTZIA

A very ornamental group and the following four not commonly found in this country.

—**Chunii.** Each \$2.50; 2 for \$4.00
A beautiful July-blooming species with large pink tinted white flowers with reflexed petals, in 4 inch long panicles all along the branches. (1-1½ feet).

—**Monbrigii.** Each \$1.25; 3 for \$3.00
Pretty, small, glistening white flowers in great profusion. Zone VI. (1-1½ feet).

—**seichuensis corymbiflora.** Each \$1.25; 3 for \$3.00
Innumerable white, star-like flowers in corymbose clusters; it is one of the best late summer shrubs. Zone VI. (1½-2 ft).

—**Sieboldiana.** Each \$1.25; 3 for \$3.00
A low shrub, 6 feet, with fragrant white flowers with bright orange anthers. (1-1½ feet)

ONE EACH of the above for \$5.00

DIOSPYROS

Persimmon and suitable only for the South.

—**Lotus.** Each \$1.25; 3 for \$2.75
Date Plum. Grows to 40 feet; the leaves exude a heavy odor; fruits yellow turning black.

ELSCHOLTZIA

—**Stauntonii.** Each \$1.25; 3 for \$3.00
A shrubby Labiata, 4-5 feet high, mint-scented and purplish pink flowers in panicles, blooming from August to October. From North China. (1½-2 feet).

EMBOTHRIUM

—**coccineum lanceolatum.** Each \$2.50
The hardest form of the incomparable Chilean Fire-bush. A slender, graceful tree covered with brilliant scarlet flowers in May. Zone VI. (6-9 inches).

EUCALYPTUS

Gum Tree. Not hardy in the North.
—**parvifolia.** Each \$1.50; 3 for \$3.25
The hardiest species. A very handsome tree, not found in the U. S. to our knowledge. Zone VI. (2-2½ feet).

EUONYMUS

Spindle Tree. They are very ornamental shrubs or trees and hardy in the North with but a few exceptions.

—**Bungeanus.** Each \$1.50; 3 for \$3.00
Tall slender shrubs to 15 feet with attractive cream-colored, pink tinted fruits. (1-1½ feet).

—**grandiflorus.** Each \$2.00
A semi-evergreen shrub to 12 feet from the Himalayas. Capsules are yellow with scarlet seeds. Zone VI. (1-1½ feet).

EUPTELIA

Asian shrubs hardy up to Michigan.
—**Franchetii.** Each \$1.75; 3 for \$3.25
A large shrub or small tree of great interest. It is covered in the spring with clusters of red anthers. (2-2½ feet).

—**polyandra.** Each \$1.50; 3 for \$3.00
Similar but notable for the color of its young shoots and autumn leaves. (2-2½ ft)

ONE EACH of above two species \$3.00

MAGNOLIA HIGHDOWNENSIS

This splendid hybrid, of which the original plant is in Col. Stern's famous Sussex Garden (England), is an ideal garden shrub of rounded habit and as high as 10 feet. The large fragrant flowers are bowl-shaped, waxy in texture and pure white, with central ring of rosy red anthers; they are open during May and June. The beautiful Magnolia breeds true from seed and the stock offered here was raised from seed supplied by Col. Sterns. We have only a limited number of plants to offer and the opportunity to secure one of these lovely Magnolias is rare. (1-1½ feet).

EACH \$3.50; 2 for \$6.00

EXOCHORDA

The Pearl Bushes are among the most outstanding and beautiful of spring flowering shrubs. Very ornamental, Spirea-like and hardy in the North.

—**Giraldii Wilsonii.** Each \$1.25; 3 for \$3.00
Large snow-white flowers, 2 inches across, covering its arching branches. (1½-2 feet).

—**racemosa.** Each \$1.25; 3 for \$3.00
A magnificent, large flowered species, the flowers 2 inches across; grows to 10 feet. (1½-2 feet).

—**serratifolia.** Each \$2.00; 3 for \$4.00
The prettiest of all the Exochordas. It is from Manchuria and forms a well shaped bush about 8 feet high and in the spring its slender branches are wreathed from end to end with lovely, 1-1½ inch wide, glistening white flowers. (1½-2 feet).

ONE EACH of above 3 species for \$4.00

FATSHEDERA

—**Lizei.** Each \$1.50; 3 for \$3.00
A remarkable hybrid between the Irish Ivy, Hedera Helix, and the Japanese Aralia, Fatsia japonica. A very pretty foliage shrub. Zone VII. (1½-2 feet).

FUCHSIA

—**magellanica versicolor.** Each \$1.50
A rare form with gray-green leaves, variegated pink, crimson and cream; grows to 15 feet when trained on walls. Zone VII.

GAULTHERIA

These are all tender shrubs suitable for the far South. Moist sandy or peaty soils and part shade. The three species are rare in this country.

—**Forrestii.** Each \$2.00; 3 for \$5.00
Remarkable for its lovely dark porcelain-blue berries; shrub 2-3 feet high. Zone VII. (6-9 inches).

—**Hookeri.** Each \$2.00; 3 for \$5.00
A low spreading shrub with attractive foliage; berries dark blue. Zone VII.

—**Mipueliana.** Each \$2.00; 3 for \$5.00
A creeping shrub with bright green leaves and large white fruits. Zone VII. (4-6 inches).

ONE EACH of above 3 species for \$5.00

HYPERICUM

St John's Wort. They are all very ornamental, most are hardy up to Michigan. The three species offered here are all rare and magnificent plants and to our knowledge, not grown or offered in this country. We only have a limited number to offer this year.

—**konyichense.** Each \$2.00; 3 for \$5.00
A rare Chinese shrub to 4 feet with beautiful 2 inch flowers of golden yellow freely borne from June to October. (9-12")

—**penduliflorum.** Each \$2.00; 3 for \$5.00
Large flowers with conspicuous stamens, a graceful shrub of 6 feet and a continuous bloomer. (1½-2 feet).

—**Rowallane Hybrid.** Each \$2.50; 3 for \$6.00
A magnificent plant. The flowers are bowl-shape, a rich golden yellow, 3 inches across. Zone VII. (1½-2 feet).

ILICIAM

—**anisatum.** Each \$2.00; 3 for \$5.00
Aromatic evergreen, large shrub related to the Magnolia. Has pale yellow flowers. Zone VI. (1½-2 feet).

—**floridanum.** Each \$2.00
A shrub to 10 feet with brownish maroon flowers, 2 inches across. Zone VII. (1-1½)

KOELREUTHERIA

Pride of India.
—**formosana.** Each \$2.00
A tree new to cultivation from Formosa and suitable only for Zone VII. (1½-2 ft).

LONICERA

—**Maackii podocarpa.** Each \$1.00; 3-\$2.75
A graceful shrub to 10 feet with arching branches that are laden with yellowish white flowers and bright red berries. (1½-2 feet).

OSMANTHUS

Siphonosmanthus.
—**Delavayi.** Each \$2.00; 3 for \$5.00
One of China's gems; a very graceful small leaved species, shrubby and bearing masses of fragrant white flowers in the spring. Zone VII (6-8 inches).

OSMAREA

Hybrid between Osmanthus and Phillyrea.
—**Burkwoodii.** Each \$2.00
Evergreen shrub with dark green and shining leaves and fragrant ivory-white flowers in April. Zone VI. (9-12 inches).

OSTEOMELES

—**Schwerinae microphylla.** Each \$2.00
A nice 6 foot shrub with elegant branches clad with leaves like tiny fern-fronds; pretty Hawthorne-like flowers and berries. Zone VI. (6-9 inches).

PAEONIA

—**lutea Sherriff's Variety.** Each \$3.00
Buttercup-yellow tree Paeony with very handsome foliage. A superb variety greatly superior to the type. (6-9 inches).

Continued on Back Cover

PIONEER SEED COMPANY - DIMONDALE, MICH.

SOME RARE IMPORTED SHRUBS

Continued from Inside Back Cover

HALIMIOCISTUS

Wintonensis. EACH \$2.00

A lovely bigeneric hybrid raised in England. The flowers are 2 inches across, pearly white, beautifully centered with yellow and crimson-maroon. Zone VII.

PEROVSKIA

—hybrida. Each \$1.75; 3 for \$4.00
An ideal hybrid for late summer. Deeply cut gray-green foliage and with very long spikes of lavender-blue flowers. Zone VI. (1-1½ feet).

PHILESIA

—magellanica. Each \$1.75
A dwarf shrubby Lapageria with rosy red, 2 inch nodding flowers. They require peaty soil, partial shade and are sometimes grown under glass.

PHLOMIS

—fruticosa. Each \$1.00; 3 for \$2.50
Jerusalem Sage. Large bright yellow flowers throughout the summer. Zone VII. (9-12 inches).

PIMELEA

—prostrata. Each \$1.75
Intricately branched shrublet with white Daphne-like flowers. Rare. Zone VII.

PTEROSTYRAX

Epaulctte Tree.
—hispidia. Each \$2.00
Tall Japanese shrub related to Halesia. Elegant panicles of fragrant, white flowers in the summer; hardy in the North. (1-1½ feet).

SOPHORA

—japonica. Each \$2.00; 2 for \$3.00
The Japanese Pogoda Tree. Hardy in the North; not often offered. (1-1½ feet).
—prostrata. Each \$2.00
A New Zealand shrub with tortuous, interlacing branches and golden yellow flowers. Zone VII. (2-2½ feet).

SORBUS

—rufo-ferruginea. Each \$1.50
A rare Japanese Mountain Ash with attractive red fruits. (1-1½ feet).
—Vilmorinii. Each \$2.00
A rare, graceful, small round-headed tree with dark green, fern-like foliage. Fruits are white. Both species are not grown in this country to our knowledge. (1-1½ feet).

STEWARTIA

—koreana. Each \$2.75
This superb species is very free flowering and gives brilliant autumn colors. (1-1½ feet).

STYRAX

—Wilsonii. Each \$1.75; 3 for \$4.00
A charming introduction from China. Forms a dense, small shrub to 8 feet, flowering profusely. Zone VII. (9-12 in.)

Where no mention is made as to hardiness, it can be assumed that the plant can be grown in Michigan at least.....Zone VII, is in the far South and Southern California and should be considered as near frost proof.

These zones will be shown on a map in a later issue.

May we call your attention again to the necessity of early orders on these special offers. The plants listed are all hard to find items, and the stocks in every case are limited and to add to this, is the difficulties of importation, therefore orders should reach us by the end of the year at the very latest and even then, available stocks may be sold on many kinds.

SYRINGEA

Lilacs.
—microphylla superba. Each \$3.00
A very pretty and rare shrub, with bright pink flowers in lateral panicles. (1½-2 feet).

VACCINEUM

—Arctostaphylos. Each \$1.50; 3 for \$4.00
An attractively fall-colored large bush, to 10 feet high, and not grown in this country to our knowledge. (9-12 inches).
—cylindraceum. Each \$1.50; 3 for \$4.00
A very rare shrub, characterised by its cylindrical, blue-black berries. (6-9 in.)
—padifolium. Each \$1.50; 3 for \$4.00
A large shrub with waxy, yellow flowers, tinged purple, and followed by dark blue berries; rare in this country. Zone VII. (9-12 inches).

VERONICA

—albicans. Each \$1.50; 3 for \$3.00
(Hibe albicans). A dense, rounded, glaucous shrub, 2 feet high, with white flowers in many flowered racemes. Zone VII. (9-12 inches).
—Aoiara. Each \$1.50; 3 for \$3.00
A small rare shrub from New Zealand; it has narrow glaucous leaves and white flowers. Zone VII. (9-12 inches).

VIBURNUM

—betulifolium. Each \$1.75; 3 for \$4.00
A tall growing shrub, the long branches of which are bent over with the weight of bunches of bright red berries. (1-1½ ft).
—Davidii. Each \$1.75; 3 for \$4.00
A 3 foot evergreen shrub with rounded head and producing wonderful bright turquoise-blue berries. Zone VII. (6-9 in.)
—hupehense. Each \$1.50; 3 for \$3.00
A medium sized Chinese shrub growing to 5 feet, bearing bright red berries. (1-1½')
—Sargentii. Each \$1.00; 3 for \$2.00
An Asiatic species resembling V. Opulus. (1-1½ feet).
—setigerum. Each \$1.50; 3-\$3.00; 10-\$9.00

Where a bold effect is desired, this Chinese shrub will provide it. Forming an erect-branched specimen to 12 feet high, it cannot fail to be strikingly colorful when laden with its glowing red, egg-shaped berries, each nearly ½ inch long. The leaves are used by the monks of Mount Omei as a kind of tea. This should also be an ideal species to grow in large groups for bird shelter and food. Those wishing them in quantity, should write for special prices, while our stock lasts.

WEIGELIA

—florida folius purpureis. Each \$2.00
A rare and attractive 8 foot shrub with purple foliage and pink flowers. (1½-2 ft)

ZANTHOXYLUM

—simulans. Each \$1.50; 3 for \$3.00
Aromatic shrub or small tree, to 20 feet, having glossy leaves and red fruits. This Chinese relative of the "Prickly Ash" or "Toothache Tree", is very handsome and conspicuous on account of its shining leaves. (1-1½ feet).

PIERIS

—Forrestii. Each \$3.00
An astoundingly striking shrub, the young growth being glowing scarlet and appearing at the same time as the masses of waxy white flowers. A rare ornamental shrub. (9-15 inches).

ENGLISH CLEMATIS VINES

After the Rose, the Clematis stands unrivalled for effectiveness and adaptability for most purposes of garden decoration. This remark applies particularly to the large-flowered hybrids listed below, which, being less easily established than the species, require and fully deserve more care in the selection of the site and preparation of the soil where it is proposed to plant them. They should be so placed that their roots are shaded from the direct rays of the sun, and be given good loamy soil with which well rotted manure and lime in some form have been mixed. Good drainage is essential.

The varieties of the Florida and Patens sections flower on the previous year's shoots, and should therefore be pruned immediately after flowering. The Lanuginosa section may also be treated in this way, or alternatively be pruned hard in spring, as is best for the other sections, to defer flowering until summer and autumn. Hard pruning means cutting back young shoots to within six inches of older wood.

The letters in brackets following the names indicate the sections to which the varieties belong viz.: F—Florida, J—Jackmanii, L—Lanuginosa, P—Patens, T—Texensis, (coccinea), V—Viticella.

PRICE: Each, \$1.50; 3 for \$4.00; 10- \$12.00.

ASCOTIENSIS (V). Azure blue.

BEAUTY OF WORCESTER (L). Bluish violet, with conspicuous white stamens. Occasionally produces double flowers.

BELLE OF WOKING (F). Pale mauve, double flowers.

COMTESSE de BOUCHARD (J). A beautiful soft rose-pink variety.

CRIMSON KING (L). Bright rose-red.

DANIEL DERONDA (L). Deep violet-blue.

DUCHESS of ALBANY (T). Bright rich pink, shading to lilac-pink at the edges.

DUCHESS of EDINBURGH (F). Large double white.

DUCHESS of SUTHERLAND (V). Petunia with darker berries.

ERNEST MARKHAM (V). Petunia red with a velvety sheen.

Clematis List Continued on Page 164

PIONEER SEED COMPANY - DIMONDALE, MICH.